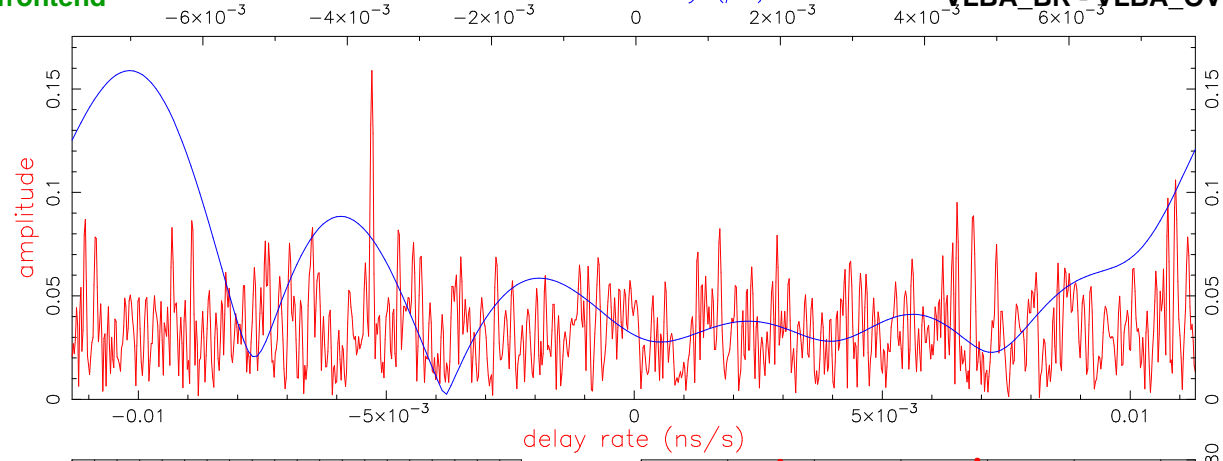


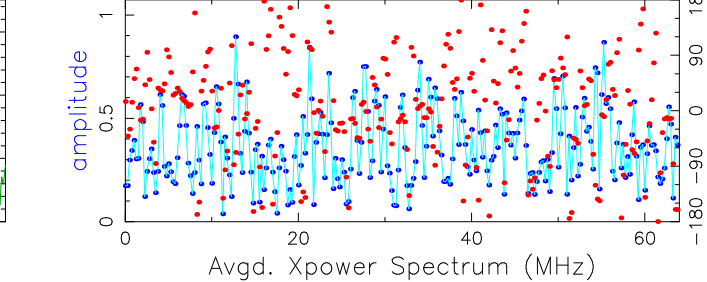
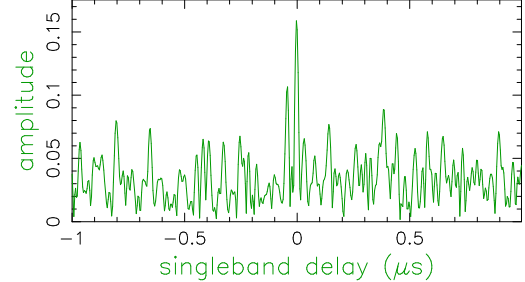
Mk4/DiFX fourfit 3.20 rev 0  
 frontend

2013+370.12714G, No0070, bo  
 VLBA\_BR - VLBA\_OV, fgroup W, pol LL

multiband delay ( $\mu$ s)

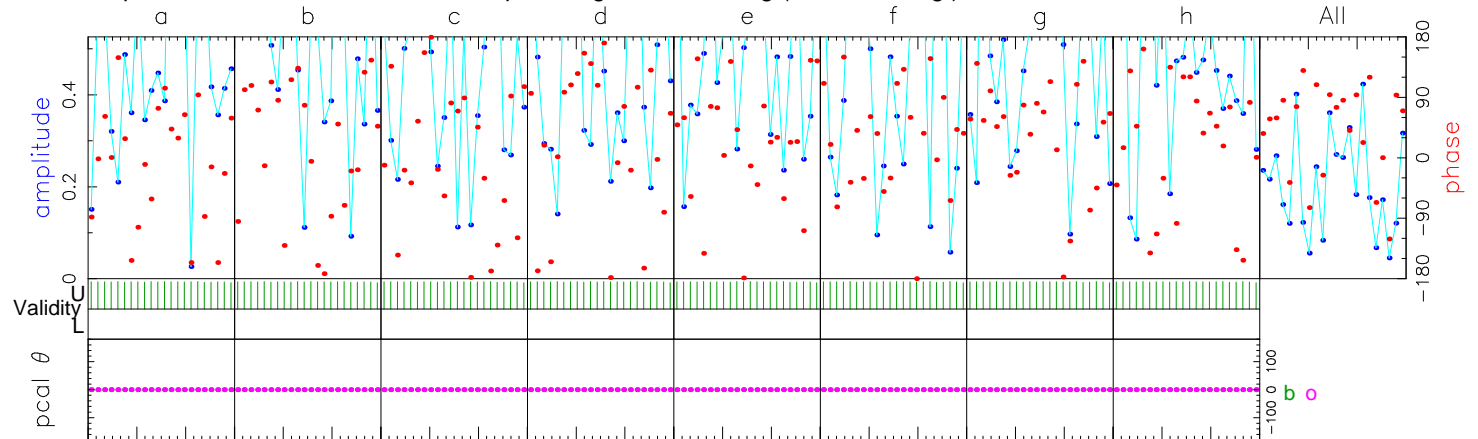


Fringe quality 0  
 SNR 5.8  
 Int time 177.989  
 Amp 0.175  
 Phase 65.2  
 PFD 4.8e-01  
 Delays (us)  
 SBD -0.002861  
 MBD -0.007009  
 Fringe rate (Hz)  
 -0.456686  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132455  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



Avgd. Xpower Spectrum (MHz)

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec

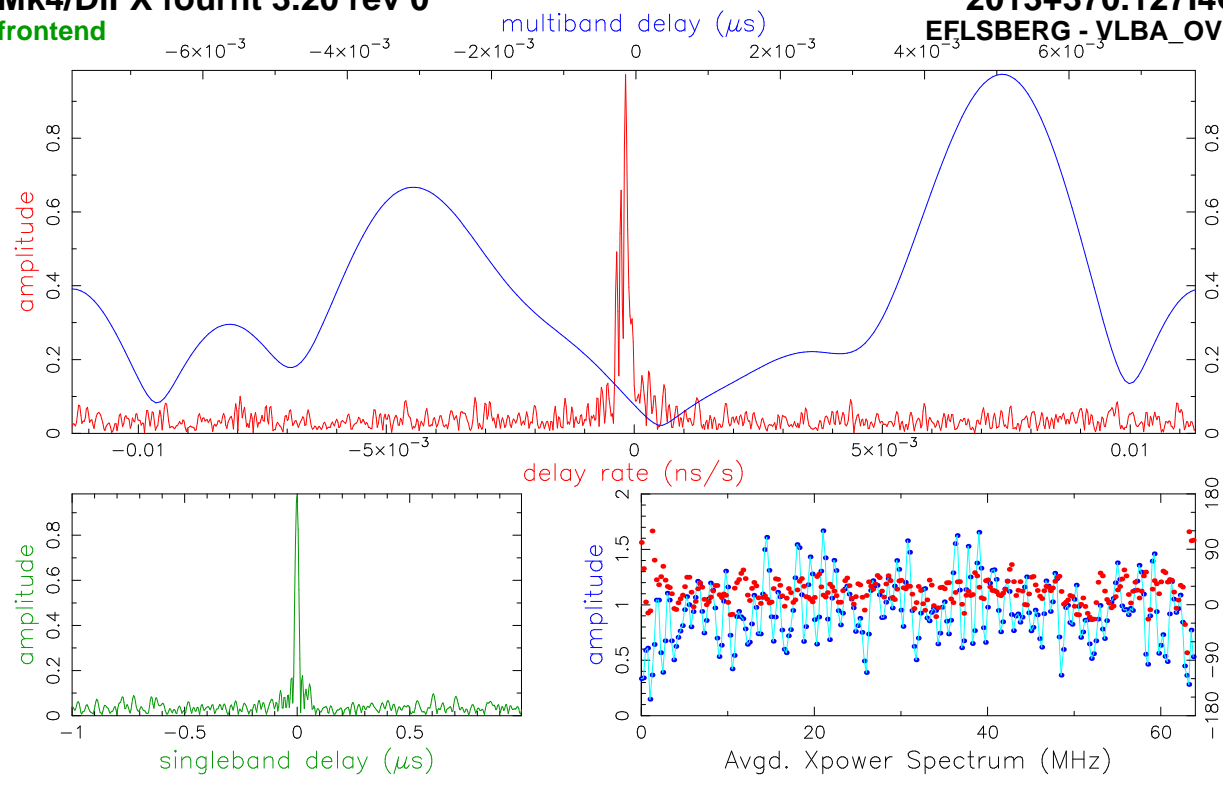


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
b	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
b:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
b:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
b	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
b	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	-1.22961899169E+02									
Sband delay (usec)	-1.22957750691E+02									
Phase delay (usec)	-1.22954887839E+02									
Delay rate (us/s)	-8.09267885277E-02									
Total phase (deg)			-13.8							
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)									65.2	+/- 19.6
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)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										

ph/seg (deg) 69.4 46.0 Amplitude 0.175 +/- 0.030 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 74.7 80.3 Search (1024X32) 0.148 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 37.5 27.8 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 49.5 48.4 Inc. seg. avg. 0.174 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 b: az 96.2 el 59.5 pa -56.4 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 591.752 1584.496 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/bo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/bo.W.15.12714G simultaneous interpolator

Mk4/DiFX fourfit 3.20 rev 0  
frontend

2013+370.12714G, No0070, Bo  
EFLSBERG - VLBA\_OV, fgroup W, pol LL

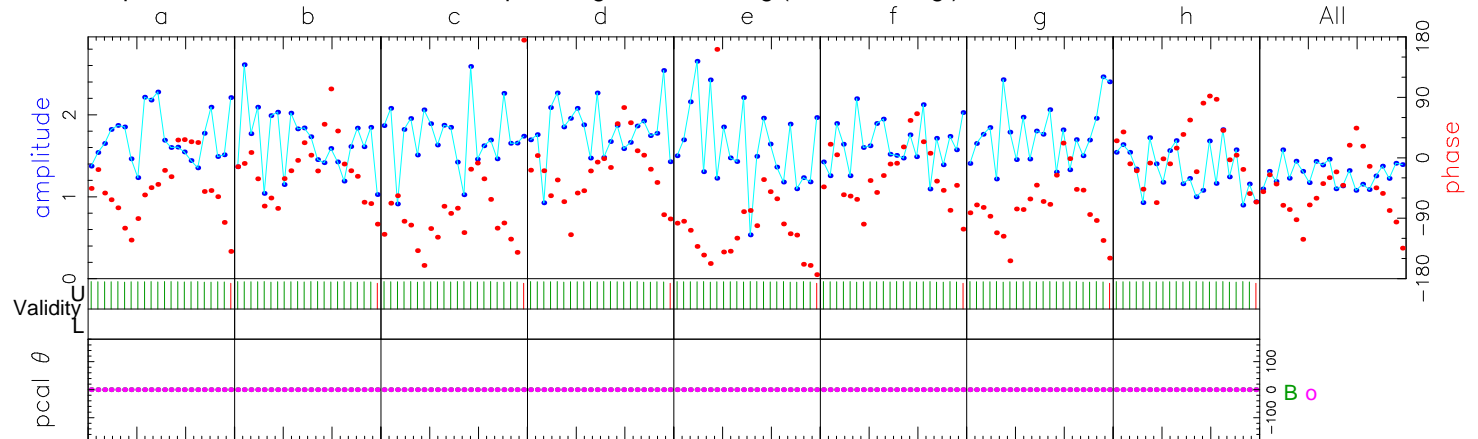


Fringe quality 5

SNR 35.9  
Int time 178.189  
Amp 0.984  
Phase -51.4  
PFD 0.0e+00  
Delays (us)  
SBD -0.001404  
MBD 0.005022  
Fringe rate (Hz)  
-0.015503  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512

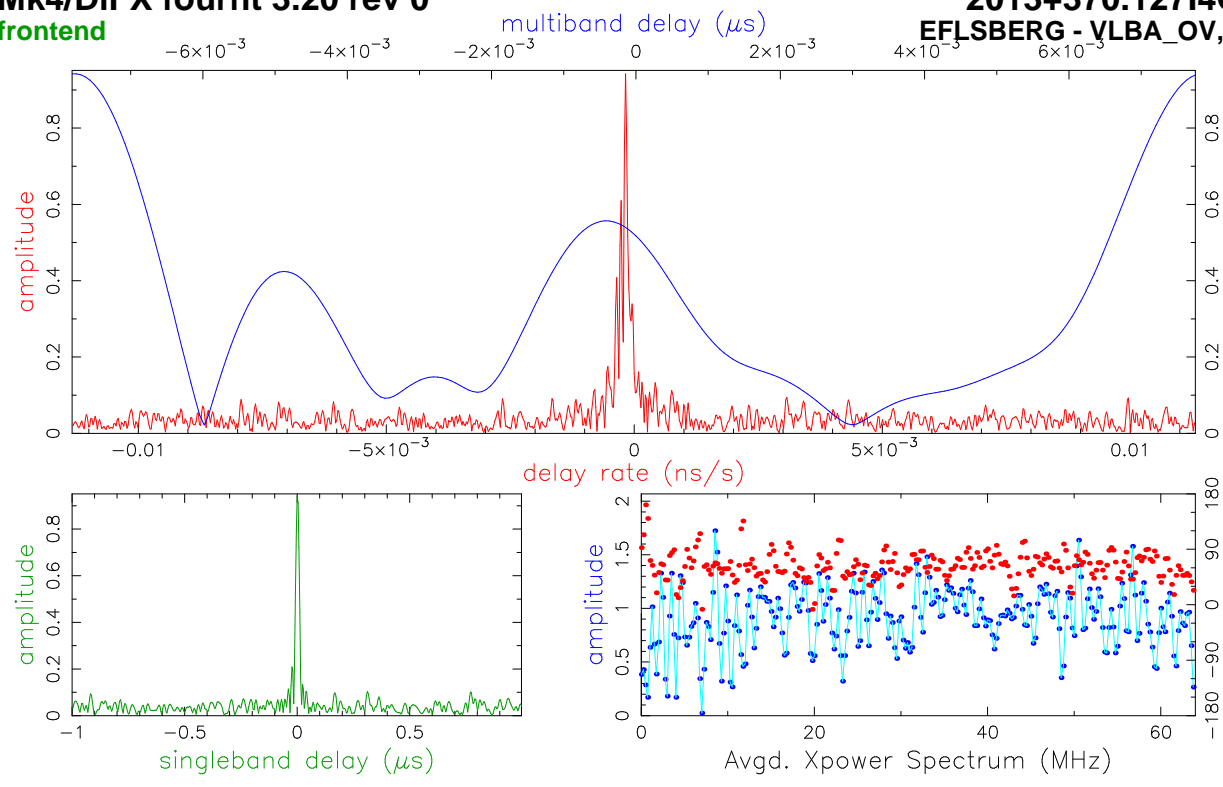
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 004000.00  
Stop 004300.22  
FRT 004130.00  
Corr/FF/build  
2020:070:101629  
2020:071:132455  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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
	-49.4	-19.9	-93.6	-24.8	-116.8	-28.1	-79.0	9.0	Phase	-51.4
	1.3	1.3	1.3	1.3	1.3	1.2	1.3	1.0	Ampl.	1.2
	256.8	256.5	256.9	257.4	257.3	257.3	256.9	257.3	Sbd box	256.6
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
B	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
B:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
B:o	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	
o	1000	1000	1000	1000	1000	1000	1000	1000		
B	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-8.10809577157E+03		Apriori delay (usec)		-8.10810079336E+03		Resid mbdelay (usec)		5.02179E-03	+/- 3.0E-05
Sband delay (usec)	-8.10810219761E+03		Apriori clock (usec)		1.3011742E-01		Resid sbdelay (usec)		-1.40425E-03	+/- 2.4E-04
Phase delay (usec)	-8.10810079502E+03		Apriori clockrate (us/s)		-2.0098100E-07		Resid phdelay (usec)		-1.65819E-06	+/- 1.0E-07
Delay rate (us/s)	-1.38629359968E+00		Apriori rate (us/s)		-1.38629341970E+00		Resid rate (us/s)		-1.79979E-07	+/- 9.9E-10
Total phase (deg)			Apriori accel (us/s/s)		5.45147660285E-05		Resid phase (deg)		-51.4	+/- 3.2

ph/seg (deg) 42.7 7.5 Search (1024X32) 0.952 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 33.0 13.1 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 46.0 4.5 Inc. seg. avg. 1.266 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 28.1 7.9 Inc. frq. avg. 1.236 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 294.1 el 29.5 pa 46.8 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 10017.455 4374.223 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/Bo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/Bo.W.16.12714G

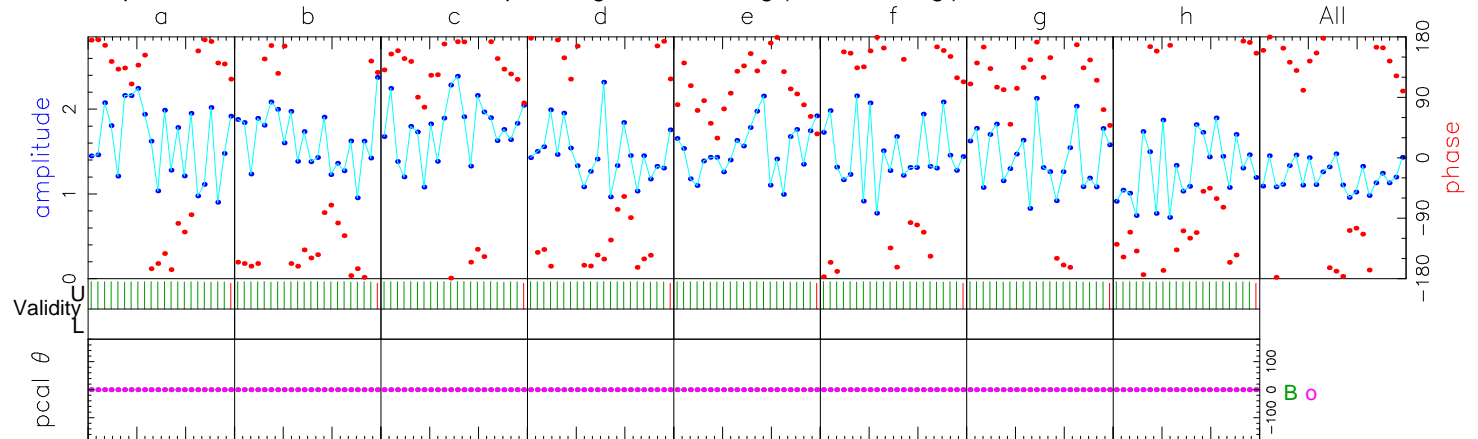


Fringe quality 5

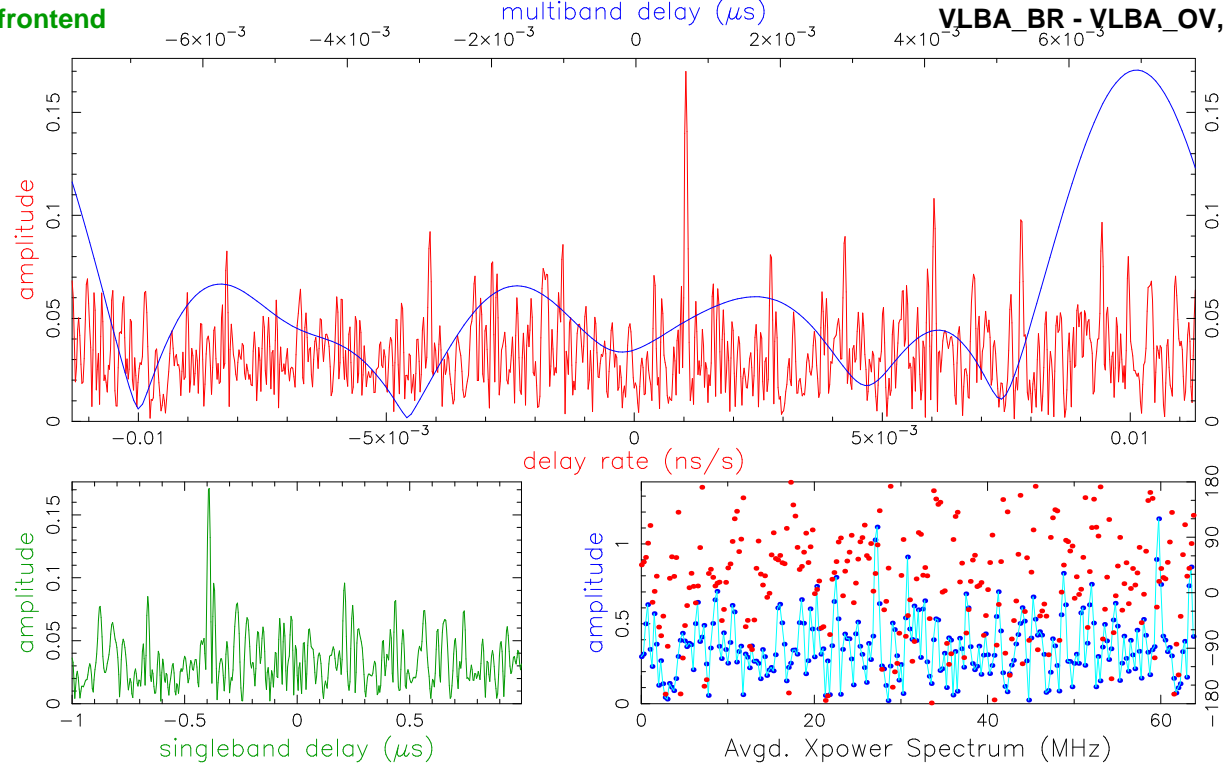
SNR 34.7  
 Int time 178.189  
 Amp 0.951  
 Phase 167.0  
 PFD 0.0e+00  
 Delays (us)  
 SBD 0.001231  
 MBD -0.007752  
 Fringe rate (Hz)  
 -0.015497  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132457  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec

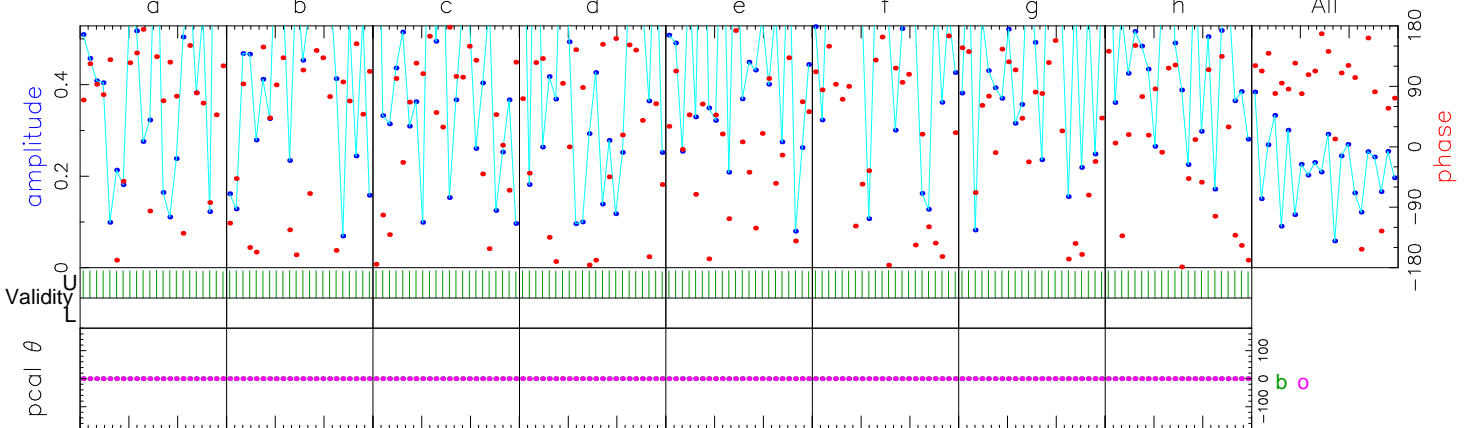


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All		
Group delay (usec)(sbd)	168.2	-166.1	151.1	-161.4	104.0	176.7	132.5	-137.1	Phase	167.0		
Sband delay (usec)	1.2	1.2	1.4	1.1	1.2	1.1	1.1	0.9	Ampl.	1.1		
Phase delay (usec)	257.4	257.1	257.7	257.7	257.9	257.9	258.2	257.8	Sbd box	257.3		
Delay rate (us/s)	U/L 352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used			
Total phase (deg)	B 1000	1000	1000	1000	1000	1000	1000	1000	PC freqs			
	o 1000	1000	1000	1000	1000	1000	1000	1000	PC freqs			
	B: 0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase			
	B: 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			
	o 1000	1000	1000	1000	1000	1000	1000	1000				
	B W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids			
	o W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks			
									Chan ids			
									Tracks			
Group delay (usec)(sbd)	-8.10809292017E+03					-8.10810079336E+03			Resid mbdelay (usec)	-7.75181E-03	+/- 3.1E-05	
Sband delay (usec)	-8.10809956261E+03					1.3011742E-01			Resid sbdelay (usec)	1.23075E-03	+/- 2.5E-04	
Phase delay (usec)	-8.10810078797E+03					-2.0098100E-07			Resid phdelay (usec)	5.38590E-06	+/- 1.1E-07	
Delay rate (us/s)	-1.38629359961E+00					-1.38629341970E+00			Resid rate (us/s)	-1.79904E-07	+/- 1.0E-09	
Total phase (deg)		44.6				5.45147660285E-05			Resid phase (deg)	167.0	+/- 3.3	
									PCal mode: MANUAL, MANUAL			
									PCal rate: 0.000E+00, 0.000E+00 (us/s)			
ph/seg (deg)	41.7	7.7	Search (1024X32)	0.938					sb window (us)	-1.000	1.000	
amp/seg (%)	32.5	13.5	Interp.	0.000					mb window (us)	-0.008	0.008	
ph/frq (deg)	41.5	4.7	Inc. seg. avg.	1.205					Sample rate(MISamp/s): 128	dr window (ns/s)	-0.011	0.011
amp/frq (%)	24.8	8.1	Inc. frq. avg.	1.134					Data rate(Mb/s): 2048	ion window (TEC)	0.00	0.00
									nlags: 256	t_cohere infinite		
B: az 294.1 el 29.5 pa 46.8		o: az 78.2 el 60.0 pa -78.1				u,v (fr/asec) 10017.455 4374.223						simultaneous interpolator
Control file: cf_1234_gmva		Input file: /Exps/c192c/v1_CygA2/1234/No0070/Bo..12714G				Output file: /Exps/c192c/v1_CygA2/1234/No0070/Bo.W.36.12714G						



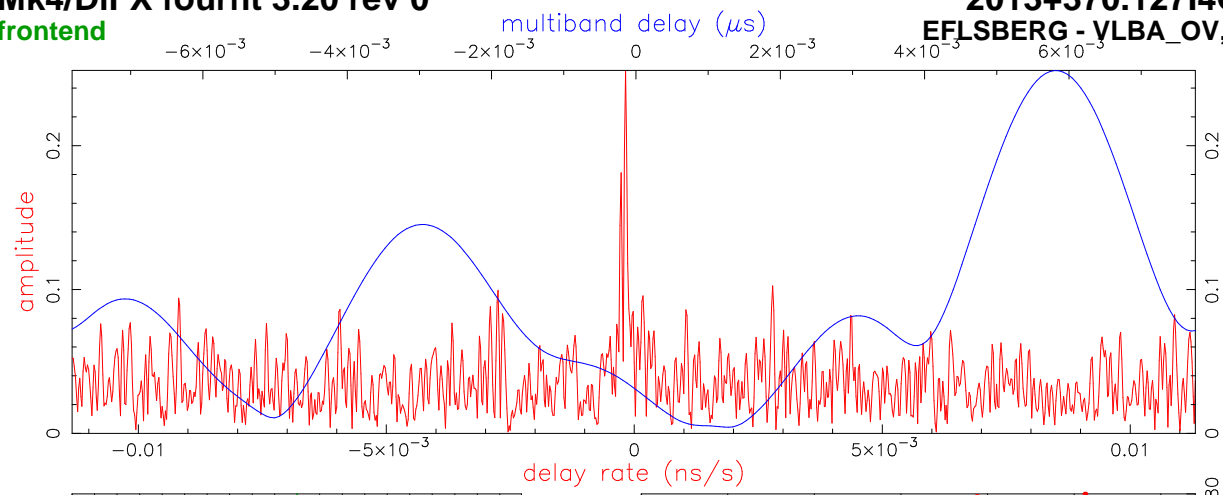
Fringe quality 0  
 SNR 6.4  
 Int time 177.989  
 Amp 0.176  
 Phase 112.1  
 PFD 2.0e-02  
 Delays (us)  
 SBD -0.392456  
 MBD 0.007032  
 Fringe rate (Hz)  
 0.089115  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132457  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec

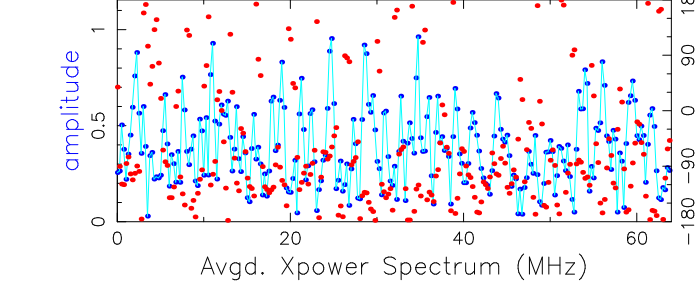
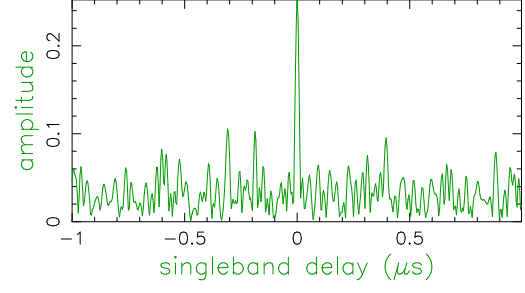


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
b	1000	1000	1000	1000	1000	1000	1000	1000	APs used	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
b:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
b	1000	1000	1000	1000	1000	1000	1000	1000	Mani PC	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
b	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
Group delay (usec)(sbd)	-1.23354107701E+02								7.03224E-03	+/- 1.7E-04
Sband delay (usec)	-1.23347345941E+02								-3.92456E-01	+/- 1.3E-03
Phase delay (usec)	-1.22954886325E+02								3.61561E-06	+/- 5.8E-07
Delay rate (us/s)	-8.09204523149E-02								1.03454E-06	+/- 5.5E-09
Total phase (deg)			33.1						112.1	+/- 17.9
Apriori delay (usec)					-1.22954889941E+02					
Apriori clock (usec)					-1.7291904E+01					
Apriori clockrate (us/s)					-2.4337607E-07					
Apriori rate (us/s)					-8.09214868544E-02					
Apriori accel (us/s/s)					1.00974463681E-05					
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
SampCntNorm: enabled									-0.008	0.008
mb window (us)									-0.011	0.011
dr window (ns/s)									0.00	0.00
ion window (TEC)									0.00	0.00

b: az 96.2 el 59.5 pa -56.4 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 591.752 1584.496 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/bo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/bo.W.37.12714G

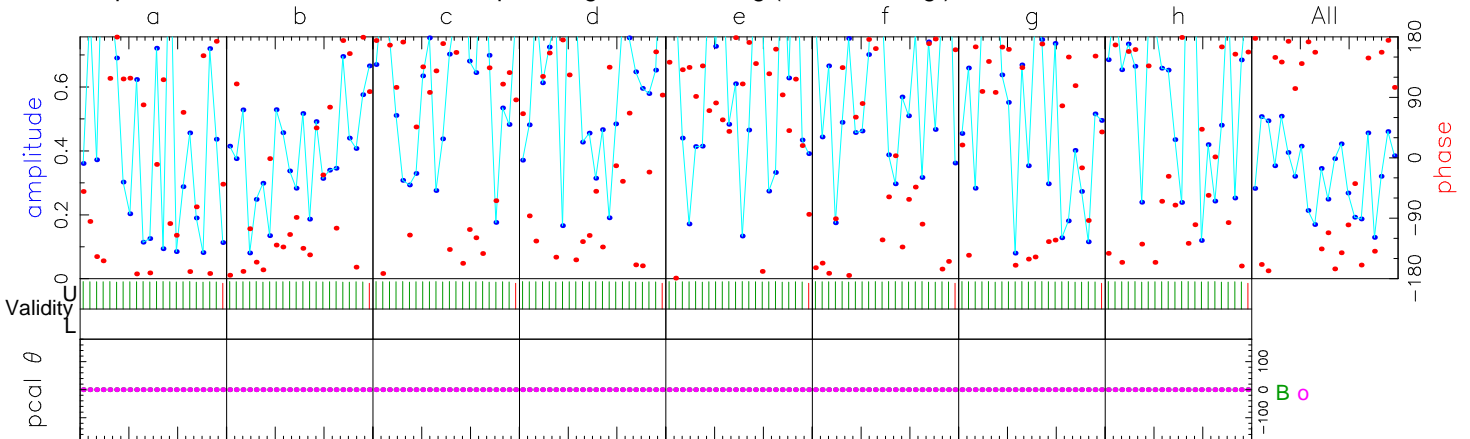


Fringe quality 9  
 SNR 9.2  
 Int time 178.189  
 Amp 0.252  
 Phase 176.6  
 PFD 6.4e-12  
 Delays (us)  
 SBD -0.000216  
 MBD 0.005809  
 Fringe rate (Hz)  
 -0.015677  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132459  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



Avgd. Xpower Spectrum (MHz)

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec

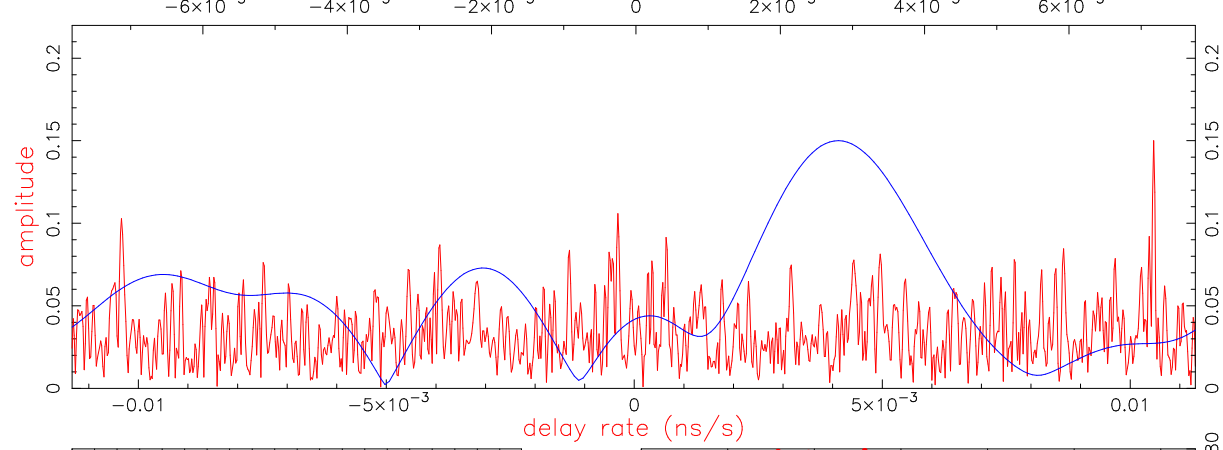


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-155.6	-168.3	169.8	-175.8	115.9	-163.0	153.8	-148.6	Phase	176.6
	0.2	0.2	0.4	0.2	0.4	0.4	0.3	0.3	Ampl.	0.3
	338.0	208.2	257.4	498.3	257.7	258.2	257.9	257.5	Sbd box	256.9
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
B	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
B:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
B:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
B	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
o	1000	1000	1000	1000	1000	1000	1000	1000		
B	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-8.10809498391E+03		Apriori delay (usec)		-8.10810079336E+03		Resid mbdelay (usec)		5.80945E-03	+/- 1.2E-04
Sband delay (usec)	-8.10810100936E+03		Apriori clock (usec)		1.3011742E-01		Resid sbdelay (usec)		-2.16000E-04	+/- 9.4E-04
Phase delay (usec)	-8.10810078767E+03		Apriori clockrate (us/s)		-2.0098100E-07		Resid phdelay (usec)		5.69397E-06	+/- 4.0E-07
Delay rate (us/s)	-1.38629360169E+00		Apriori rate (us/s)		-1.38629341970E+00		Resid rate (us/s)		-1.81989E-07	+/- 3.9E-09
Total phase (deg)			Apriori accel (us/s/s)		5.45147660285E-05		Resid phase (deg)		176.6	+/- 12.4

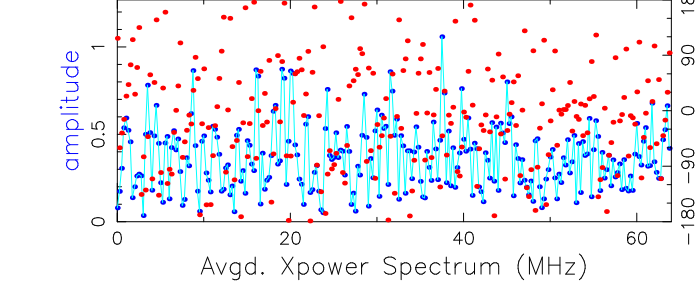
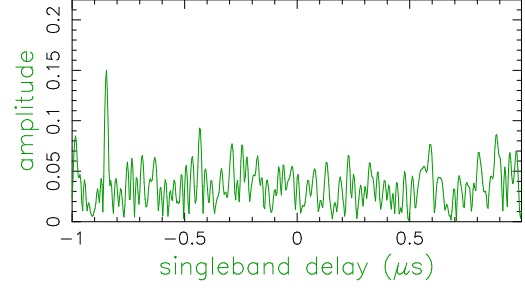
ph/seg (deg) 50.6 29.2 Amplitude 0.252 +/- 0.027 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 56.3 50.9 Search (1024X32) 0.249 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 34.0 17.6 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 37.7 30.7 Inc. seg. avg. 0.300 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 Inc. frq. avg. 0.282 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00

B: az 294.1 el 29.5 pa 46.8 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 10017.455 4374.223 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/Bo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/Bo.W.55.12714G

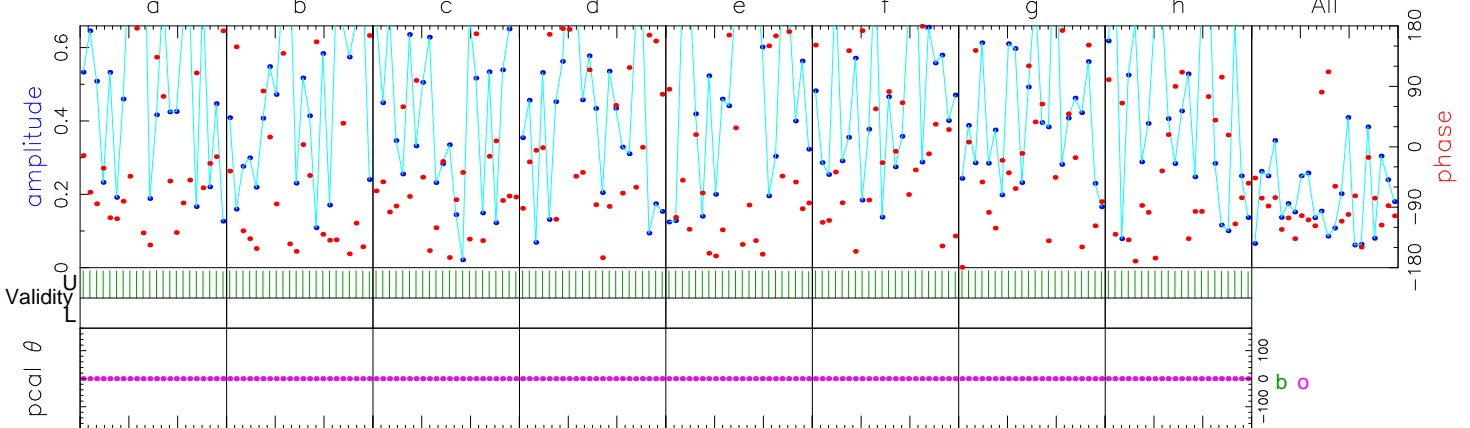
multiband delay ( $\mu\text{s}$ )



Fringe quality 0  
 SNR 5.5  
 Int time 177.989  
 Amp 0.220  
 Phase -92.6  
 PFD 9.9e-01  
 Delays (us)  
 SBD -0.848087  
 MBD 0.002794  
 Fringe rate (Hz)  
 0.903735  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132459  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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
	-78.0	-134.6	-86.3	-69.6	-115.8	-42.7	-45.9	-130.7	Phase	-92.6
	0.4	0.3	0.4	0.2	0.4	0.1	0.2	0.2	Ampl.	0.2
	134.5	181.3	150.0	401.9	40.9	152.4	491.4	82.6	Sbd box	39.9
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
b	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
b:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
b:o	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	
o	1000	1000	1000	1000	1000	1000	1000	1000		
b	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	-1.23795845751E+02		Apriori delay (usec)		-1.22954889941E+02		Resid mbdelay (usec)		2.79419E-03	+/- 2.0E-04
Sband delay (usec)	-1.23802976691E+02		Apriori clock (usec)		-1.7291904E+01		Resid sbdelay (usec)		-8.48087E-01	+/- 1.6E-03
Phase delay (usec)	-1.22954892928E+02		Apriori clockrate (us/s)		-2.4337607E-07		Resid phdelay (usec)		-2.98716E-06	+/- 6.7E-07
Delay rate (us/s)	-8.09109953905E-02		Apriori rate (us/s)		-8.09214868544E-02		Resid rate (us/s)		1.04915E-05	+/- 6.5E-09
Total phase (deg)			Apriori accel (us/s/s)		1.00974463681E-05		Resid phase (deg)		-92.6	+/- 20.9

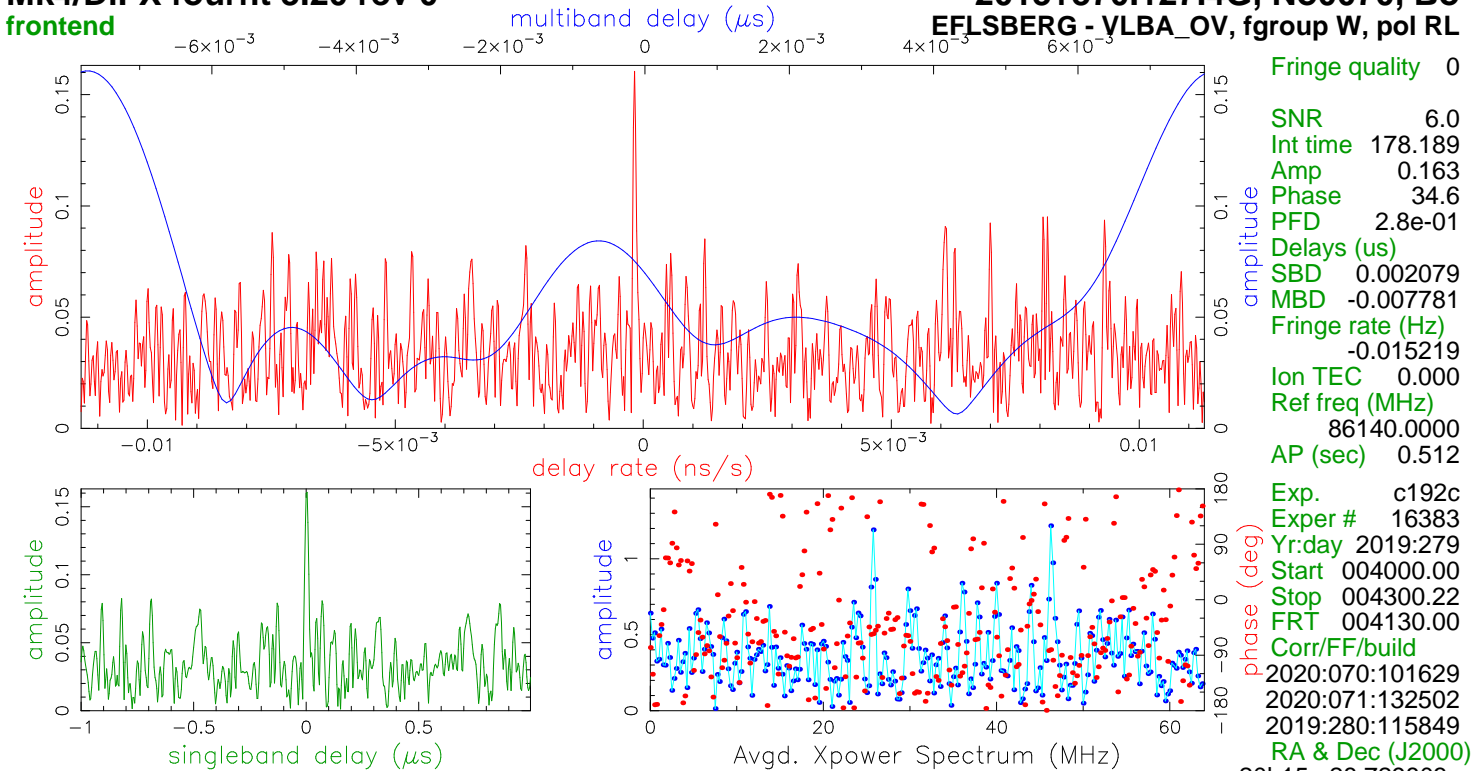
ph/seg (deg) 57.8 49.0 Search (1024X32) 0.148 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 74.3 85.6 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 39.2 29.6 Inc. seg. avg. 0.210 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 48.7 51.6 Inc. frq. avg. 0.223 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 96.2 el 59.5 pa -56.4 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 591.752 1584.496 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/bo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/bo.W.56.12714G

Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.12714G, No0070, Bo

EFLSBERG - VLBA\_OV, fgroup W, pol RL



Fringe quality 0

SNR 6.0

Int time 178.189

Amp 0.163

Phase 34.6

PFD 2.8e-01

Delays (us)

SBD 0.002079

MBD -0.007781

Fringe rate (Hz)

-0.015219

Ion TEC 0.000

Ref freq (MHz)

86140.0000

AP (sec) 0.512

Exp. c192c

Exper # 16383

Yr:day 2019:279

Start 004000.00

Stop 004300.22

FRT 004130.00

Corr/FF/build

2020:070:101629

2020:071:132502

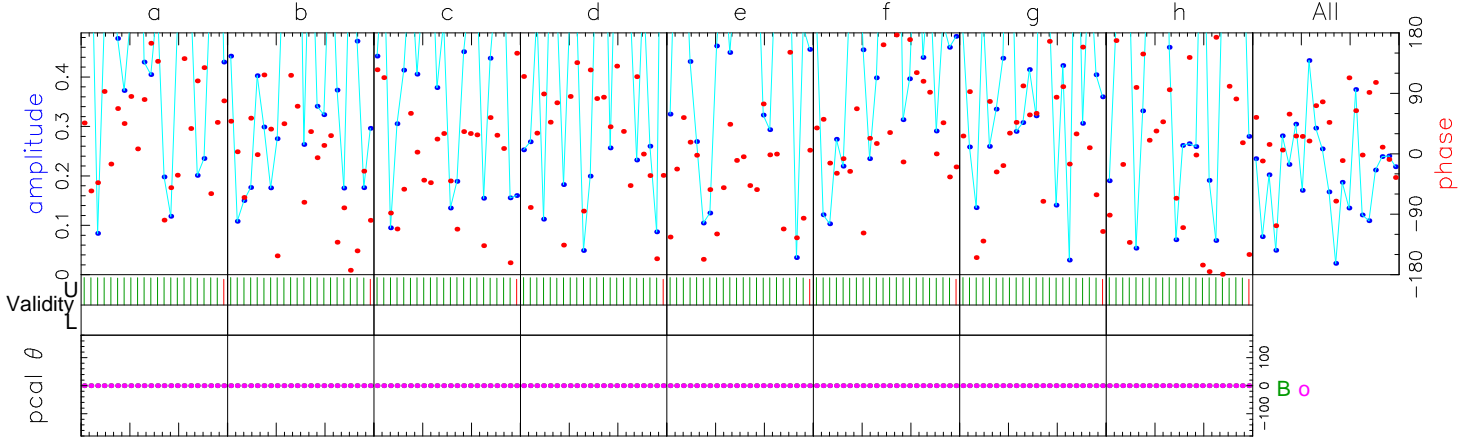
2019:280:115849

RA & Dec (J2000)

20h15m28.729803s

+37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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
	44.2	43.3	18.1	53.3	-26.5	60.1	22.8	89.0	Phase	34.6
	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.1	Ampl.	0.2
	209.3	444.8	340.0	444.9	34.4	431.0	214.0	243.0	Sbd box	257.5
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
B	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
B:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
B:o	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	
o	1000	1000	1000	1000	1000	1000	1000	1000		
B	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-8.10809294948E+03		Apriori delay (usec)		-8.10810079336E+03		Resid mbdelay (usec)		-7.78113E-03	+/- 1.8E-04
Sband delay (usec)	-8.10809871411E+03		Apriori clock (usec)		1.3011742E-01		Resid sbdelay (usec)		2.07925E-03	+/- 1.4E-03
Phase delay (usec)	-8.10810079225E+03		Apriori clockrate (us/s)		-2.0098100E-07		Resid phdelay (usec)		1.11477E-06	+/- 6.2E-07
Delay rate (us/s)	-1.38629359638E+00		Apriori rate (us/s)		-1.38629341970E+00		Resid rate (us/s)		-1.76677E-07	+/- 6.0E-09
Total phase (deg)			Apriori accel (us/s/s)		5.45147660285E-05		Resid phase (deg)		34.6	+/- 19.2

RMS Theor. Amplitude 0.163 +/- 0.027

ph/seg (deg) 54.3 45.1 Search (1024X32) 0.160

amp/seg (%) 65.6 78.8 Interp. 0.000

ph/frq (deg) 37.1 27.2 Inc. seg. avg. 0.158

amp/frq (%) 34.2 47.5 Inc. frq. avg. 0.169

Group delay (usec)(sbd) -8.10809294948E+03

Sband delay (usec) -8.10809871411E+03

Phase delay (usec) -8.10810079225E+03

Delay rate (us/s) -1.38629359638E+00

Total phase (deg) -87.8

Apriori delay (usec) -8.10810079336E+03

Apriori clock (usec) 1.3011742E-01

Apriori clockrate (us/s) -2.0098100E-07

Apriori rate (us/s) -1.38629341970E+00

Apriori accel (us/s/s) 5.45147660285E-05

Resid mbdelay (usec) -7.78113E-03

Resid sbdelay (usec) 2.07925E-03

Resid phdelay (usec) 1.11477E-06

Resid rate (us/s) -1.76677E-07

Resid phase (deg) 34.6

Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5

Pcal rate: 0.000E+00, 0.000E+00 (us/s)

Bits/sample: 2x2 SampCntNorm: enabled

Sample rate(MISamp/s): 128

Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite

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

B: az 294.1 el 29.5 pa 46.8 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 10017.455 4374.223 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/Bo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/Bo.W.76.12714G

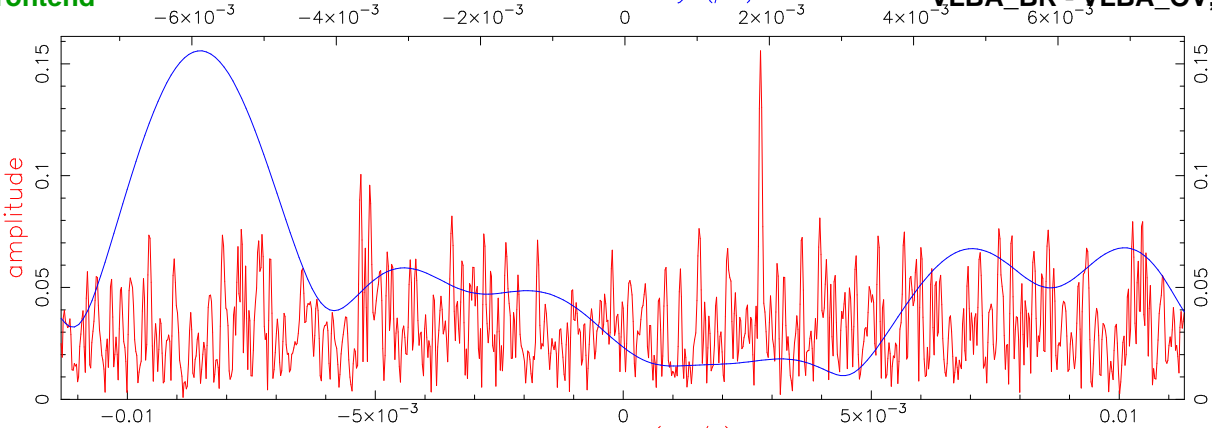
Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.12714G, No0070, bo

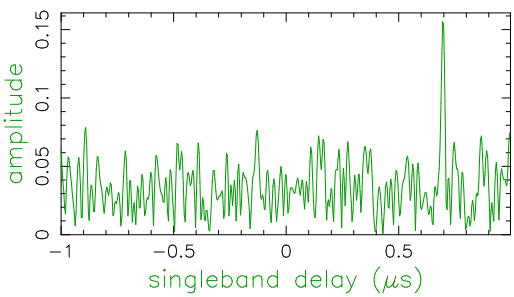
VLBA\_BR - VLBA\_OV, fgroup W, pol RL

multiband delay ( $\mu$ s)

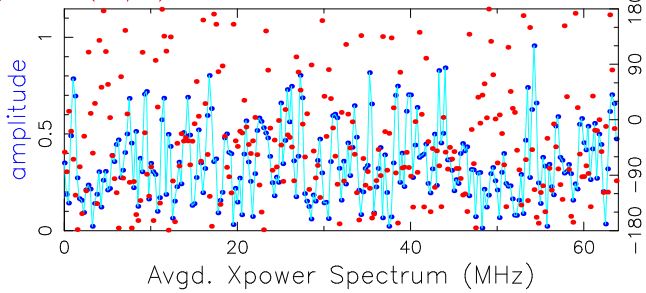


Fringe quality 0

SNR 5.8  
Int time 177.989  
Amp 0.162  
Phase 103.3  
PFD 6.2e-01  
Delays (us)  
SBD 0.696960  
MBD -0.005905  
Fringe rate (Hz)  
0.238841  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512

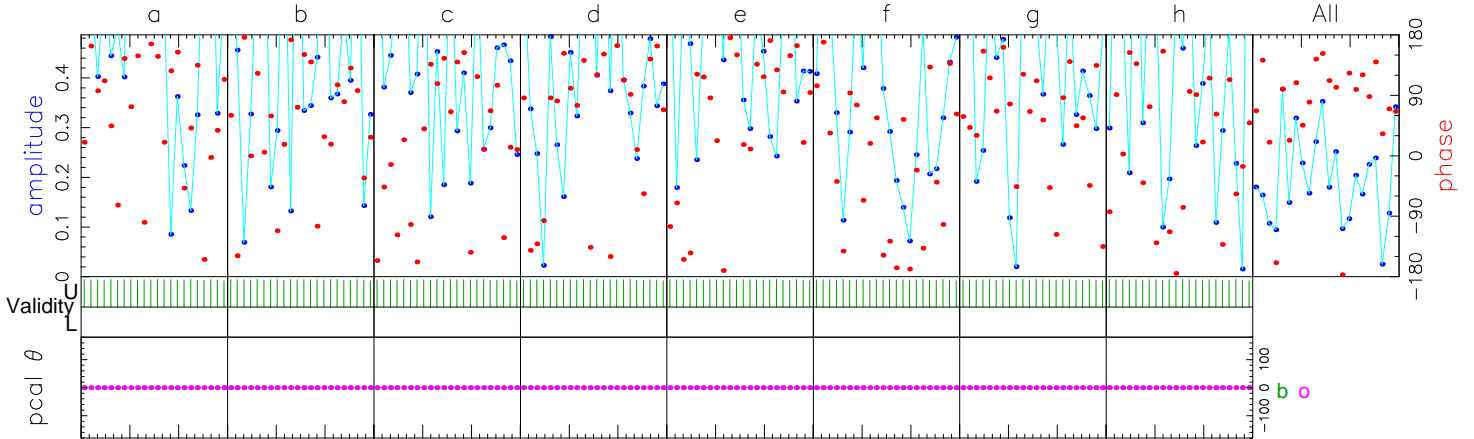


delay rate (ns/s)



Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 004000.00  
Stop 004300.22  
FRT 004130.00  
Corr/FF/build  
2020:070:101629  
2020:071:132502  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec

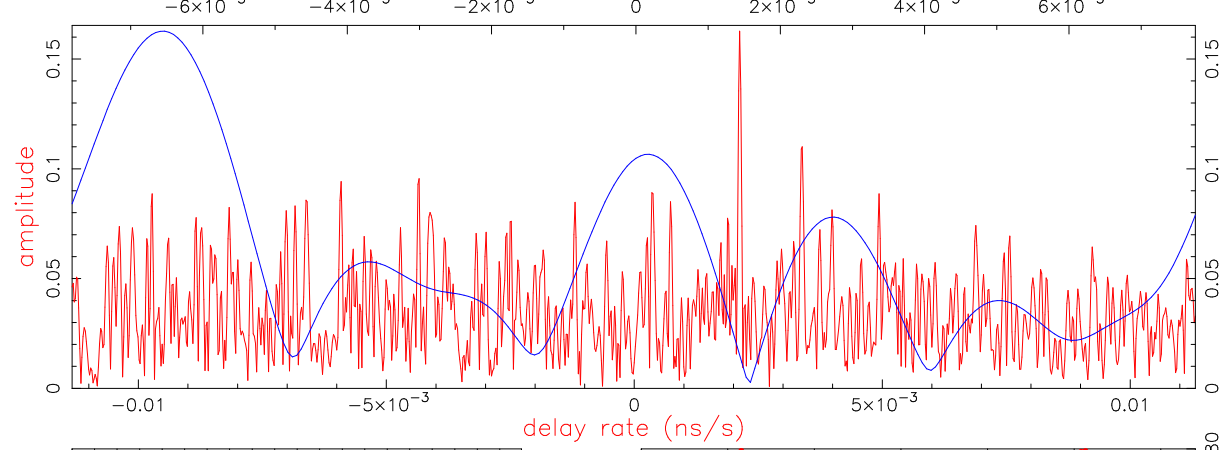


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
b	1000	1000	1000	1000	1000	1000	1000	1000	APs used	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
b:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
b:o	0:0	0:0	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	
o	1000	1000	1000	1000	1000	1000	1000	1000		
b	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
Group delay (usec)(sbd)	-1.22257670297E+02								Resid mbdelay (usec)	-5.90536E-03 +/- 1.9E-04
Sband delay (usec)	-1.22257929691E+02								Resid sbdelay (usec)	6.96960E-01 +/- 1.5E-03
Phase delay (usec)	-1.22954886609E+02								Resid phdelay (usec)	3.33148E-06 +/- 6.4E-07
Delay rate (us/s)	-8.09187141494E-02								Resid rate (us/s)	2.77271E-06 +/- 6.1E-09
Total phase (deg)			24.3						Resid phase (deg)	103.3 +/- 19.8
	RMS	Theor.	Amplitude	0.162 +/- 0.028					PCal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
ph/seg (deg)	47.6	46.5	Search (1024X32)	0.151					PCal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
amp/seg (%)	62.8	81.2	Interp.	0.000					Bits/sample: 2x2	SampCntNorm: enabled mb window (us) -0.008 0.008
ph/frq (deg)	28.5	28.1	Inc. seg. avg.	0.154					Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
amp/frq (%)	42.1	49.0	Inc. frq. avg.	0.160					Data rate(Mb/s): 2048	nlags: 256 t_cohere infinite ion window (TEC) 0.00 0.00

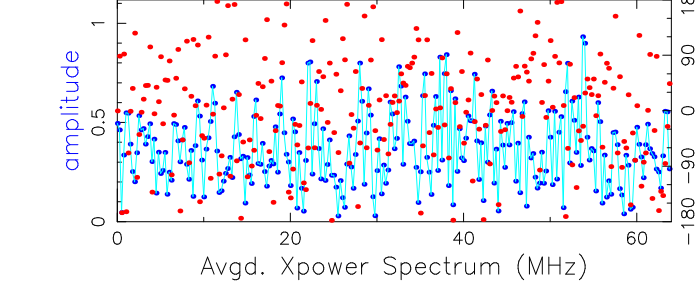
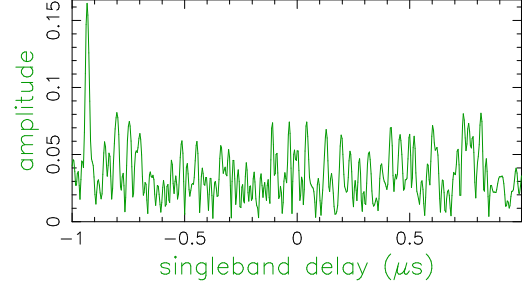
b: az 96.2 el 59.5 pa -56.4 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 591.752 1584.496 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/bo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/bo.W.77.12714G



multiband delay ( $\mu$ s)

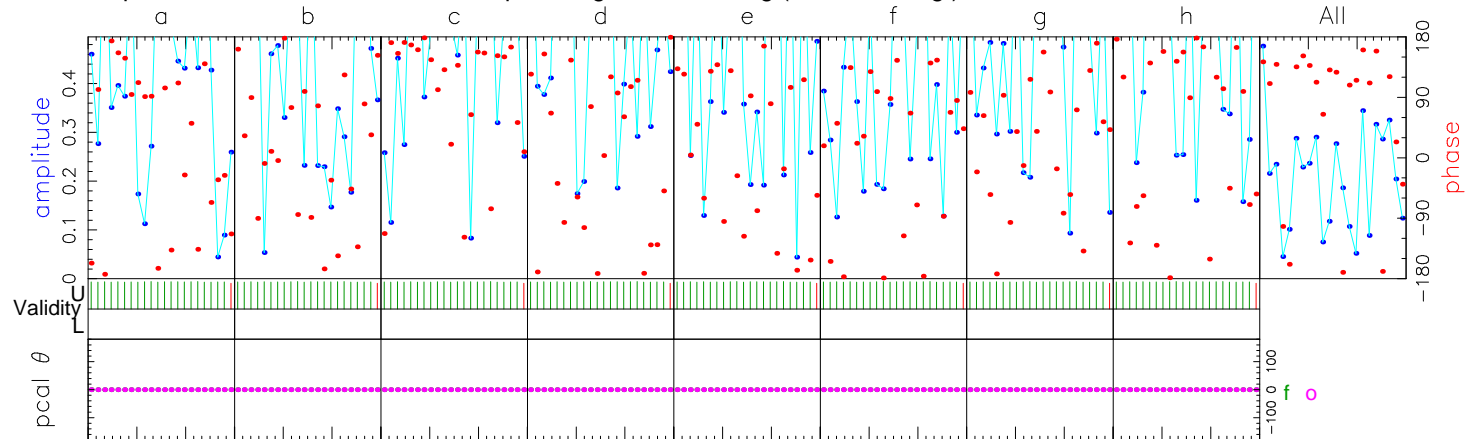


Fringe quality 0  
 SNR 5.9  
 Int time 177.289  
 Amp 0.165  
 Phase 139.0  
 PFD 3.2e-01  
 Delays (us)  
 SBD -0.933073  
 MBD -0.006540  
 Fringe rate (Hz)  
 0.183233  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132508  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



Avgd. Xpower Spectrum (MHz)

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
f	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
f:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
fo	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		
o	1000	1000	1000	1000	1000	1000	1000	1000		
f	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)		1.45972387706E+03			1.46065229226E+03				Resid mbdelay (usec)	-6.54020E-03 +/- 1.8E-04
Sband delay (usec)		1.45971921926E+03			-1.6195913E+01				Resid sbdelay (usec)	-9.33073E-01 +/- 1.5E-03
Phase delay (usec)		1.46065229675E+03			-9.1930498E-08				Resid phdelay (usec)	4.48285E-06 +/- 6.2E-07
Delay rate (us/s)		-1.80688944147E-01			-1.80691071297E-01				Resid rate (us/s)	2.12715E-06 +/- 6.0E-09
Total phase (deg)			303.0		-1.43661115354E-05				Resid phase (deg)	139.0 +/- 19.3
RMS	59.5	45.3		0.165 +/- 0.028					PCal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
ph/seg (deg)	73.1	79.1		0.161					PCal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
amp/seg (%)	40.5	27.3		0.000					Bits/sample: 2x2	SampCntNorm: enabled mb window (us) -0.008 0.008
ph/frq (deg)	48.8	47.7		0.163					Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
amp/frq (%)				0.173					Data rate(Mb/s): 2048	nlags: 256 t_cohere infinite ion window (TEC) 0.00 0.00

f: az 64.9 el 69.4 pa -101.3 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 1287.833 -1538.353 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/fo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/fo.W.111.12714G

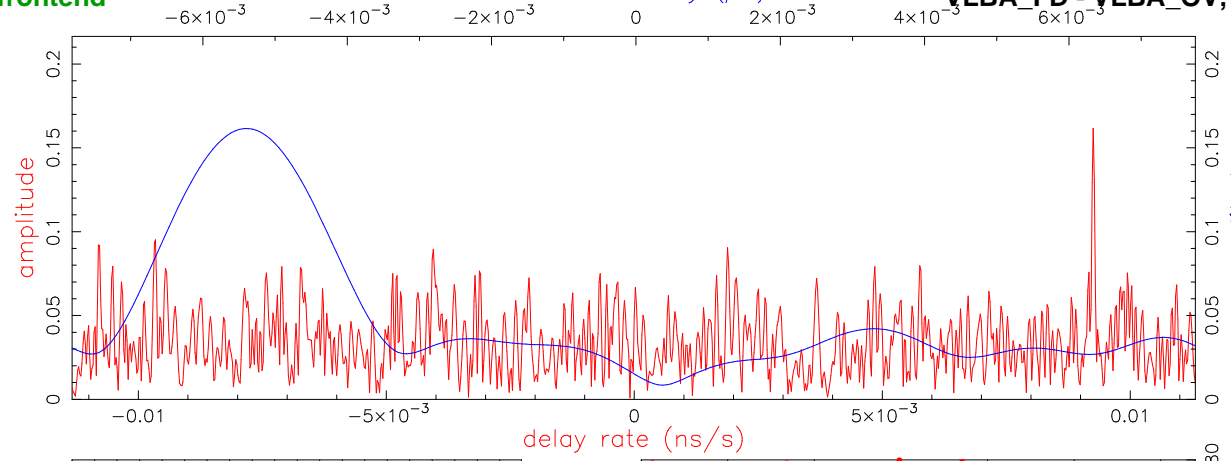
Mk4/DiFX fourfit 3.20 rev 0

frontend

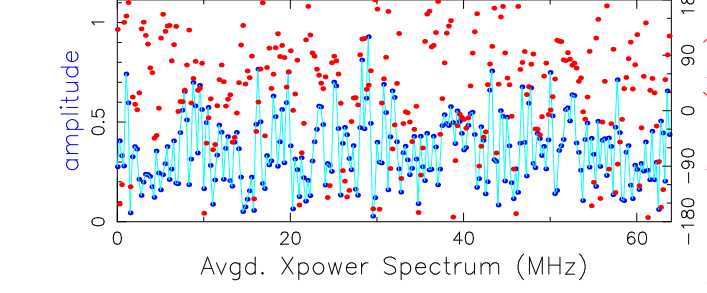
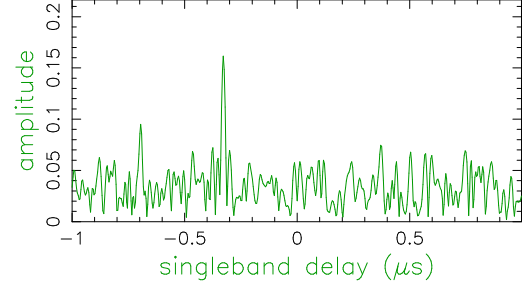
2013+370.12714G, No0070, fo

VLBA\_FD - VLBA\_OV, fgroup W, pol LR

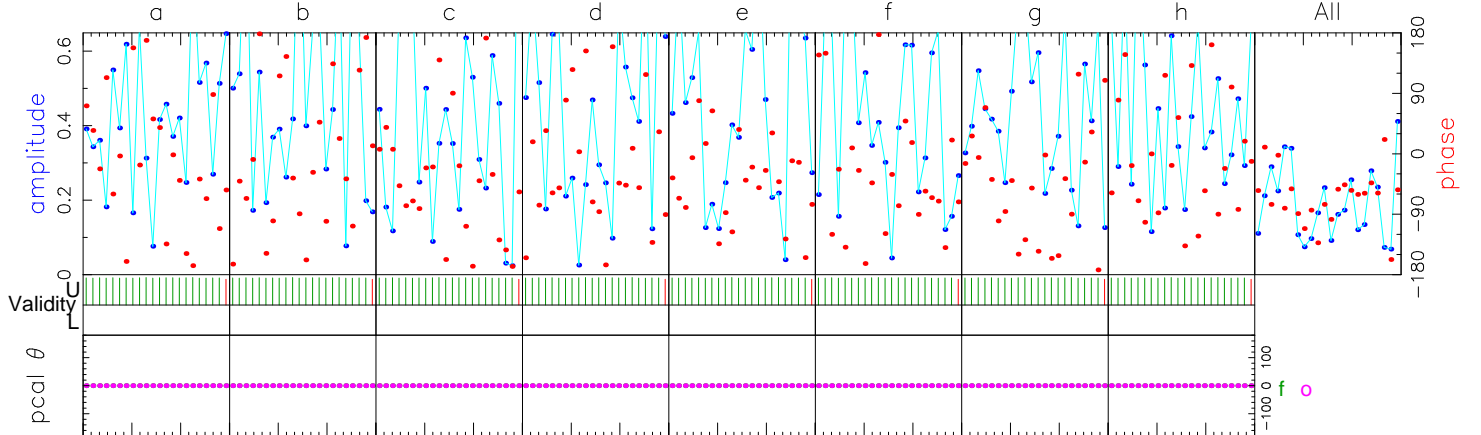
multiband delay ( $\mu$ s)



Fringe quality 0  
 SNR 5.9  
 Int time 177.289  
 Amp 0.216  
 Phase -59.4  
 PFD 4.0e-01  
 Delays (us)  
 SBD -0.328064  
 MBD -0.005395  
 Fringe rate (Hz) 0.799289  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132511  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



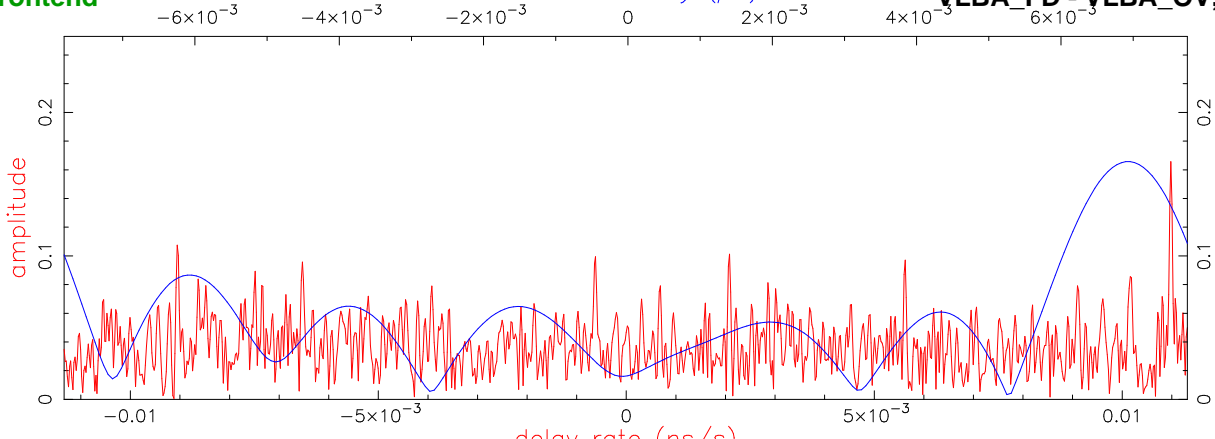
Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



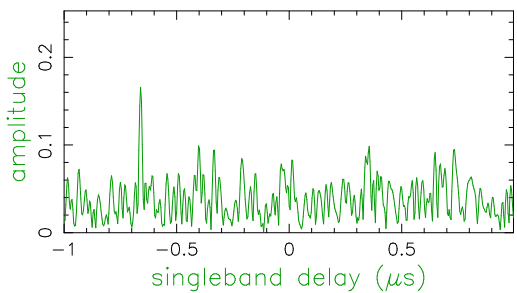
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All	
	-58.3	-85.2	-68.2	-39.7	-34.2	-77.6	-71.3	-67.1	Phase	-59.4	
	0.2	0.2	0.3	0.2	0.4	0.2	0.2	0.2	Ampl.	0.2	
	430.2	272.7	42.7	81.8	173.2	408.9	200.7	261.7	Sbd box	173.0	
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used		
f	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs		
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs		
f:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase		
f:o	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		
o	1000	1000	1000	1000	1000	1000	1000	1000			
f	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids		
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks		
									Chan ids		
									Tracks		
Group delay (usec)(sbd)	1.46031877194E+03		Apriori delay (usec)		1.46065229226E+03		Resid mbdelay (usec)		-5.39532E-03	+/- 1.8E-04	
Sband delay (usec)	1.46032422801E+03		Apriori clock (usec)		-1.6195913E+01		Resid sbdelay (usec)		-3.28064E-01	+/- 1.5E-03	
Phase delay (usec)	1.46065229035E+03		Apriori clockrate (us/s)		-9.1930498E-08		Resid phdelay (usec)		-1.91580E-06	+/- 6.3E-07	
Delay rate (us/s)	-1.80681792345E-01		Apriori rate (us/s)		-1.80691071297E-01		Resid rate (us/s)		9.27895E-06	+/- 6.0E-09	
Total phase (deg)	104.6		Apriori accel (us/s/s)		-1.43661115354E-05		Resid phase (deg)		-59.4	+/- 19.5	
	RMS	Theor.	Amplitude	0.216 +/- 0.037		Pcal mode: MANUAL, MANUAL		PC period (AP's) 5, 5			
ph/seg (deg)	40.9	45.7	Search (1024X32)	0.159		Pcal rate: 0.000E+00, 0.000E+00 (us/s)		sb window (us)		-1.000 1.000	
amp/seg (%)	62.1	79.7	Interp.	0.000		Bits/sample: 2x2		SampCntNorm: enabled		mb window (us)	-0.008 0.008
ph/frq (deg)	19.6	27.5	Inc. seg. avg.	0.194		Sample rate(MISamp/s): 128		Data rate(Mb/s): 2048		dr window (ns/s)	-0.011 0.011
amp/frq (%)	33.8	48.1	Inc. frq. avg.	0.204		Data rate(Mb/s): 2048		nlags: 256 t_cohere infinite		ion window (TEC)	0.00 0.00
f: az 64.9 el 69.4 pa -101.3	o: az 78.2 el 60.0 pa -78.1		u,v (fr/asec) 1287.833 -1538.353						simultaneous interpolator		
Control file: cf_1234_gmva	Input file: /Exps/c192c/v1_CygA2/1234/No0070/fo..12714G		Output file: /Exps/c192c/v1_CygA2/1234/No0070/fo.W.135.12714G								

multiband delay ( $\mu$ s)

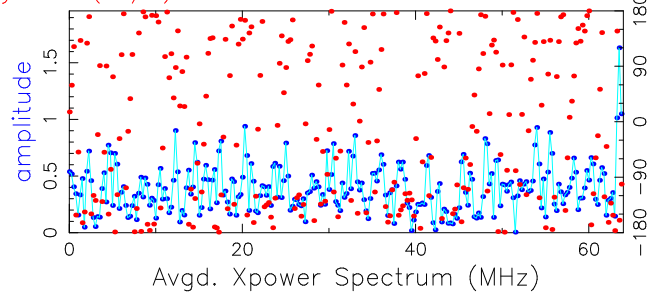
Fringe quality 0



SNR 6.0  
Int time 177.289  
Amp 0.253  
Phase 55.8  
PFD 1.8e-01  
Delays (us)  
SBD -0.659902  
MBD 0.006932  
Fringe rate (Hz)  
0.947362  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512

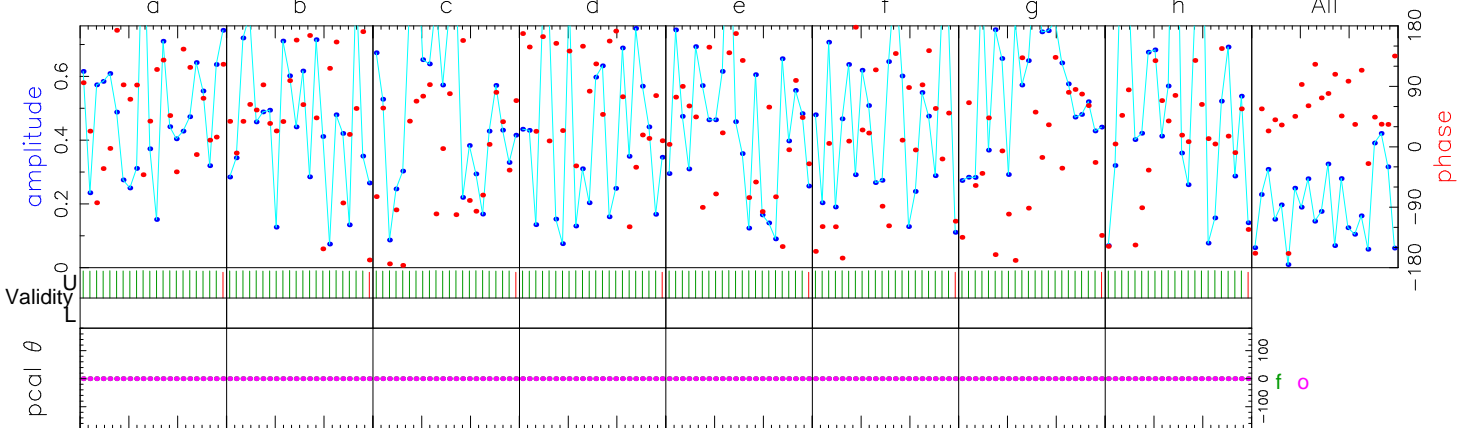


delay rate (ns/s)



Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 004000.00  
Stop 004300.22  
FRT 004130.00  
Corr/FF/build  
2020:070:101629  
2020:071:132513  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



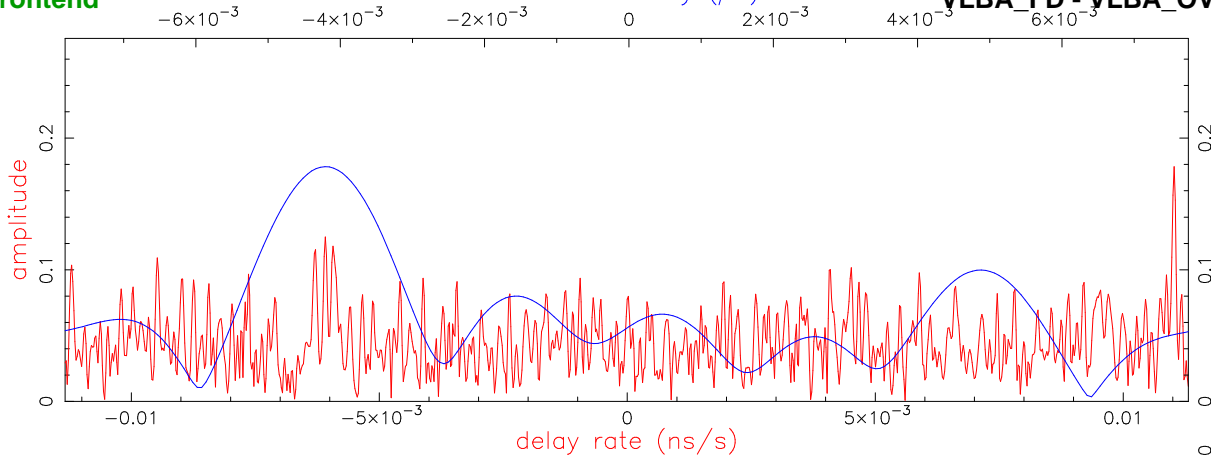
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	42.9	68.2	30.3	86.6	74.1	41.1	27.0	60.6	Phase	55.8
	0.3	0.4	0.2	0.2	0.2	0.2	0.2	0.5	Ampl.	0.2
	89.8	88.0	98.7	51.1	423.7	192.2	68.5	88.0	Sbd box	88.1
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
f	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
f:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
f:o	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	
o	1000	1000	1000	1000	1000	1000	1000	1000		
f	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd) 1.45998734966E+03 Apriori delay (usec) 1.46065229226E+03 Resid mbdelay (usec) 6.93239E-03 +/- 1.8E-04  
 Sband delay (usec) 1.45999239051E+03 Apriori clock (usec) -1.6195913E+01 Resid sbdelay (usec) -6.59902E-01 +/- 1.4E-03  
 Phase delay (usec) 1.46065229406E+03 Apriori clockrate (us/s) -9.1930498E-08 Resid phdelay (usec) 1.80062E-06 +/- 6.1E-07  
 Delay rate (us/s) -1.80680073363E-01 Apriori rate (us/s) -1.80691071297E-01 Resid rate (us/s) 1.09979E-05 +/- 5.9E-09  
 Total phase (deg) 219.9 Apriori accel (us/s/s) -1.43661115354E-05 Resid phase (deg) 55.8 +/- 19.0

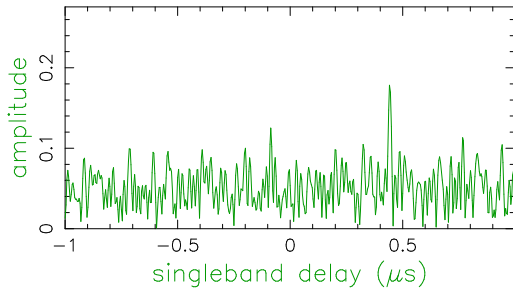
RMS Theor. Amplitude 0.253 +/- 0.042 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 ph/seg (deg) 57.6 44.5 Search (1024X32) 0.161 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 amp/seg (%) 69.9 77.7 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 ph/frq (deg) 23.5 26.8 Inc. seg. avg. 0.231 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 amp/frq (%) 45.5 46.8 Inc. frq. avg. 0.240 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00

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

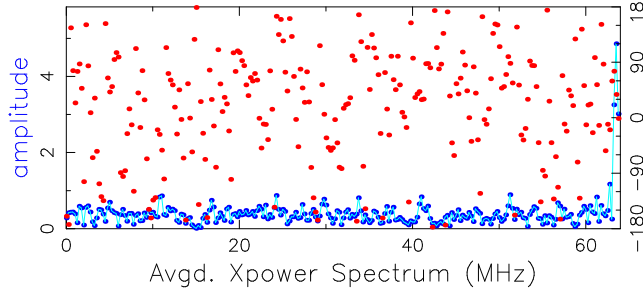
Fringe quality 0



SNR 6.6  
 Int time 177.289  
 Amp 0.276  
 Phase 154.9  
 PFD 8.0e-03  
 Delays (us)  
 SBD 0.442531  
 MBD -0.004242  
 Fringe rate (Hz)  
 0.952151  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

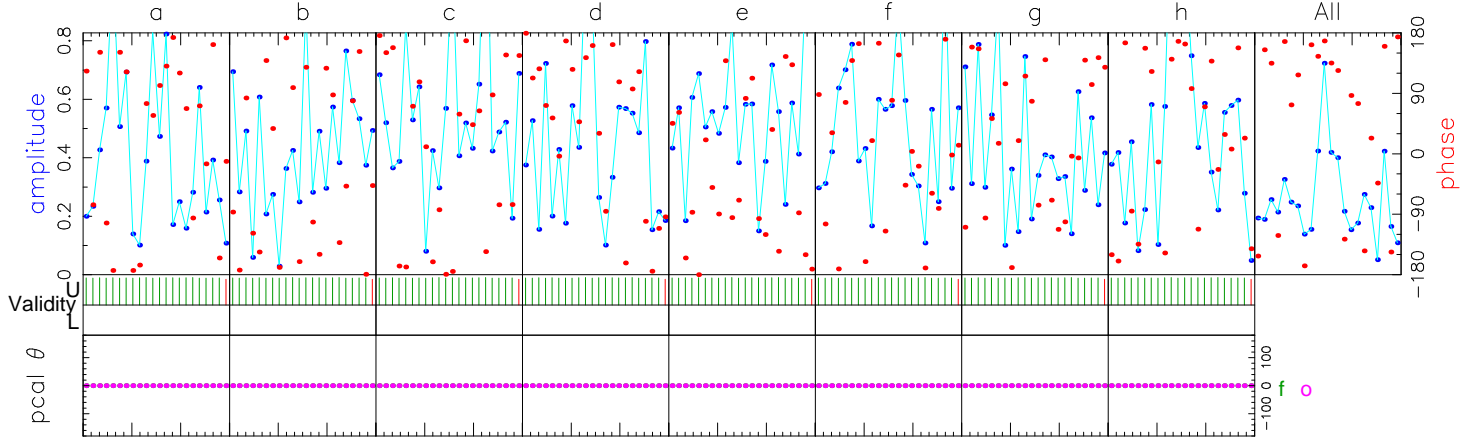


delay rate (ns/s)



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132506  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec

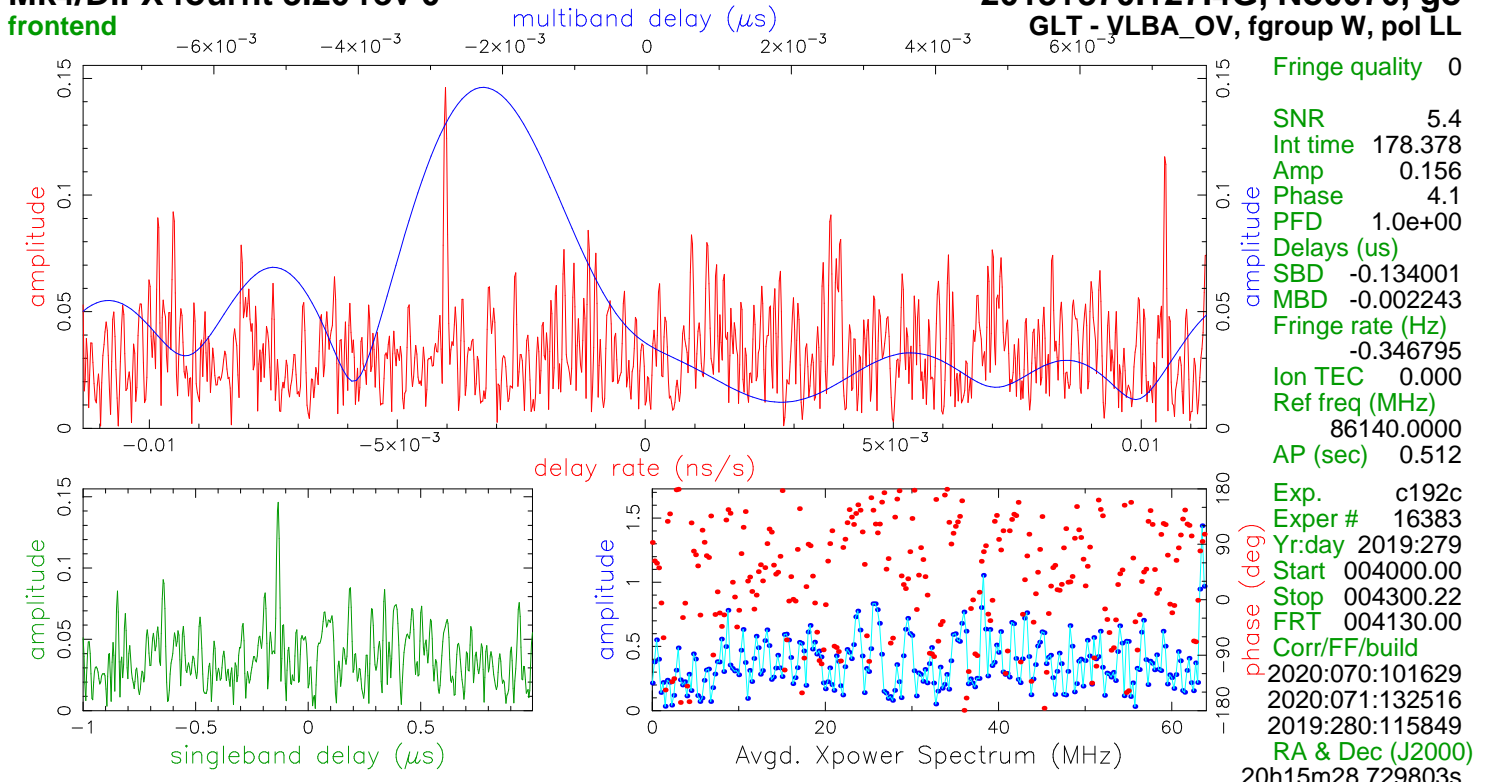


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
f	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
f:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
f:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
f	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
f	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		

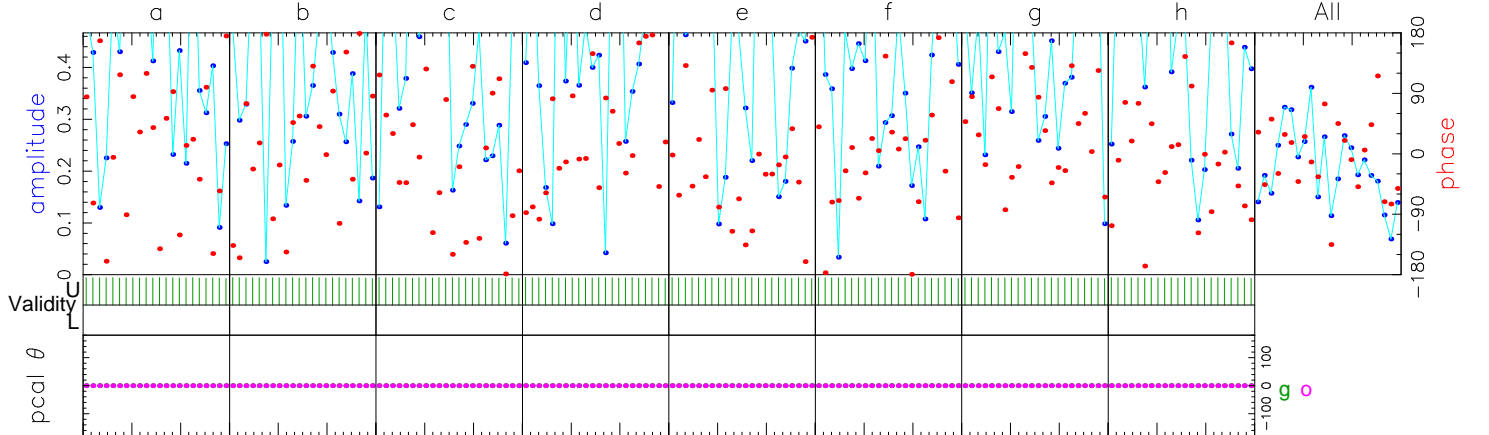
Group delay (usec)(sbd)	1.46110117563E+03	Apriori delay (usec)	1.46065229226E+03	Resid mbdelay (usec)	-4.24163E-03	+/-	1.7E-04
Sband delay (usec)	1.46109482351E+03	Apriori clock (usec)	-1.6195913E+01	Resid sbdelay (usec)	4.42531E-01	+/-	1.3E-03
Phase delay (usec)	1.46065229726E+03	Apriori clockrate (us/s)	-9.1930498E-08	Resid phdelay (usec)	4.99411E-06	+/-	5.6E-07
Delay rate (us/s)	-1.80680017765E-01	Apriori rate (us/s)	-1.80691071297E-01	Resid rate (us/s)	1.10535E-05	+/-	5.4E-09
Total phase (deg)	318.9	Apriori accel (us/s/s)	-1.43661115354E-05	Resid phase (deg)	154.9	+/-	17.5

ph/seg (deg)	63.8	Theor.	41.0	Amplitude	0.276 +/- 0.042	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5	
amp/seg (%)	91.3	Search (1024X32)	0.174	Interp.	0.000	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000	
ph/frq (deg)	27.2	Inc. seg. avg.	0.318	Inc. frq. avg.	0.265	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008
amp/frq (%)	56.3	Inc. frq. avg.	0.265			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	

f: az 64.9 el 69.4 pa -101.3 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 1287.833 -1538.353 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/fo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/fo.W.94.12714G



Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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
	60.1	4.3	-7.1	-12.3	-33.7	7.7	49.1	-8.5	Ampl.	4.1
	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	Ampl.	0.2
	209.1	6.4	448.4	398.3	3.5	78.2	414.4	256.9	Sbd box	222.7
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
g	0	0	0	0	0	0	0	0	PC freqs	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
g:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
g:o	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	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
g	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	-2.12107516386E+03		Apriori delay (usec)		-2.12094792113E+03		Resid mbdelay (usec)		-2.24272E-03 +/- 2.0E-04	
Sband delay (usec)	-2.12108192188E+03		Apriori clock (usec)		-1.5365232E+01		Resid sbdelay (usec)		-1.34001E-01 +/- 1.6E-03	
Phase delay (usec)	-2.12094792100E+03		Apriori clockrate (us/s)		7.4018997E-08		Resid phdelay (usec)		1.32446E-07 +/- 6.9E-07	
Delay rate (us/s)	-6.60379509692E-01		Apriori rate (us/s)		-6.60375483750E-01		Resid rate (us/s)		-4.02594E-06 +/- 6.6E-09	
Total phase (deg)	-329.4		Apriori accel (us/s/s)		3.63437878892E-05		Resid phase (deg)		4.1 +/- 21.3	

ph/seg (deg) 56.3 49.8 Search (1024X32) 0.145 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5

amp/seg (%) 63.8 87.0 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000

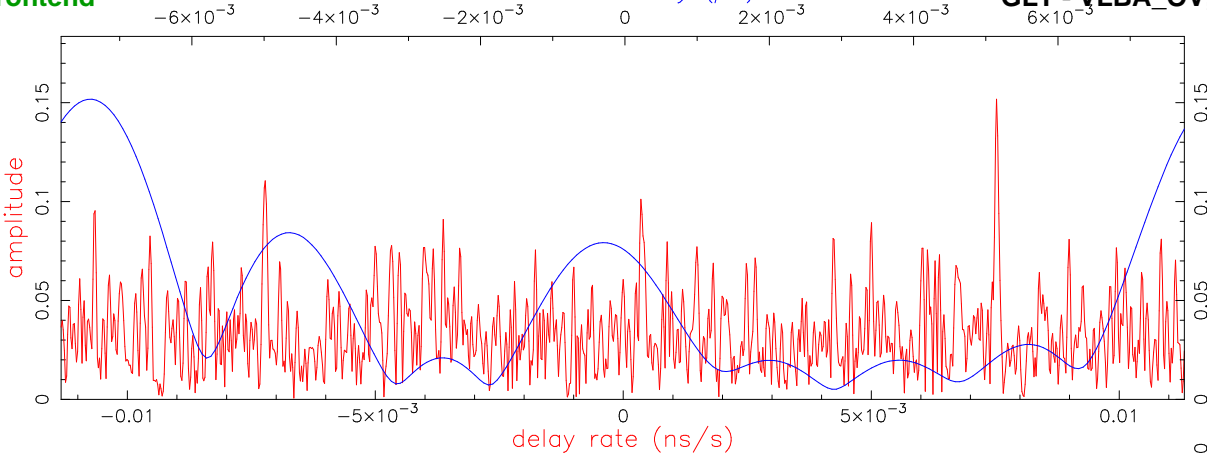
ph/frq (deg) 34.5 30.1 Inc. seg. avg. 0.159 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008

amp/frq (%) 26.1 52.5 Inc. frq. avg. 0.154 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 194.6 el 50.4 pa 4.2 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 4783.721 4739.839 simultaneous interpolator

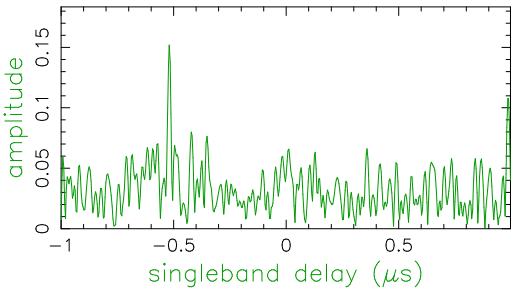
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/go..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/go.W.162.12714G

multiband delay ( $\mu$ s)

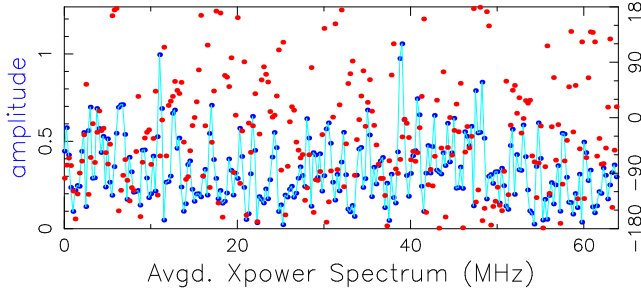


Fringe quality 0

SNR 5.5  
 Int time 178.322  
 Amp 0.184  
 Phase 169.8  
 PFD 9.7e-01  
 Delays (us)  
 SBD -0.519206  
 MBD -0.007402  
 Fringe rate (Hz)  
 0.649725  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

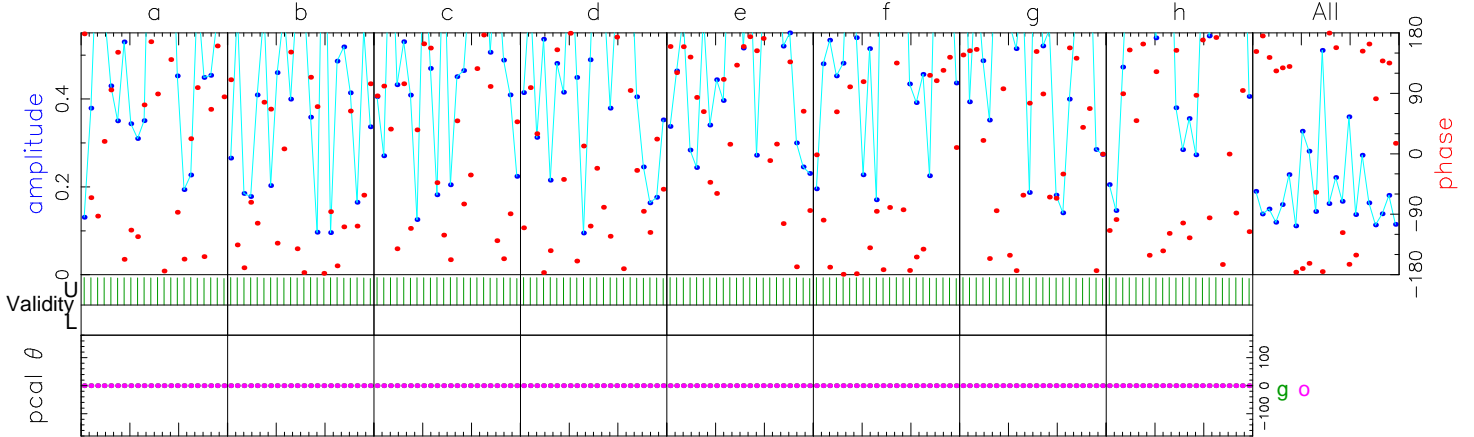


delay rate (ns/s)



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132519  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec

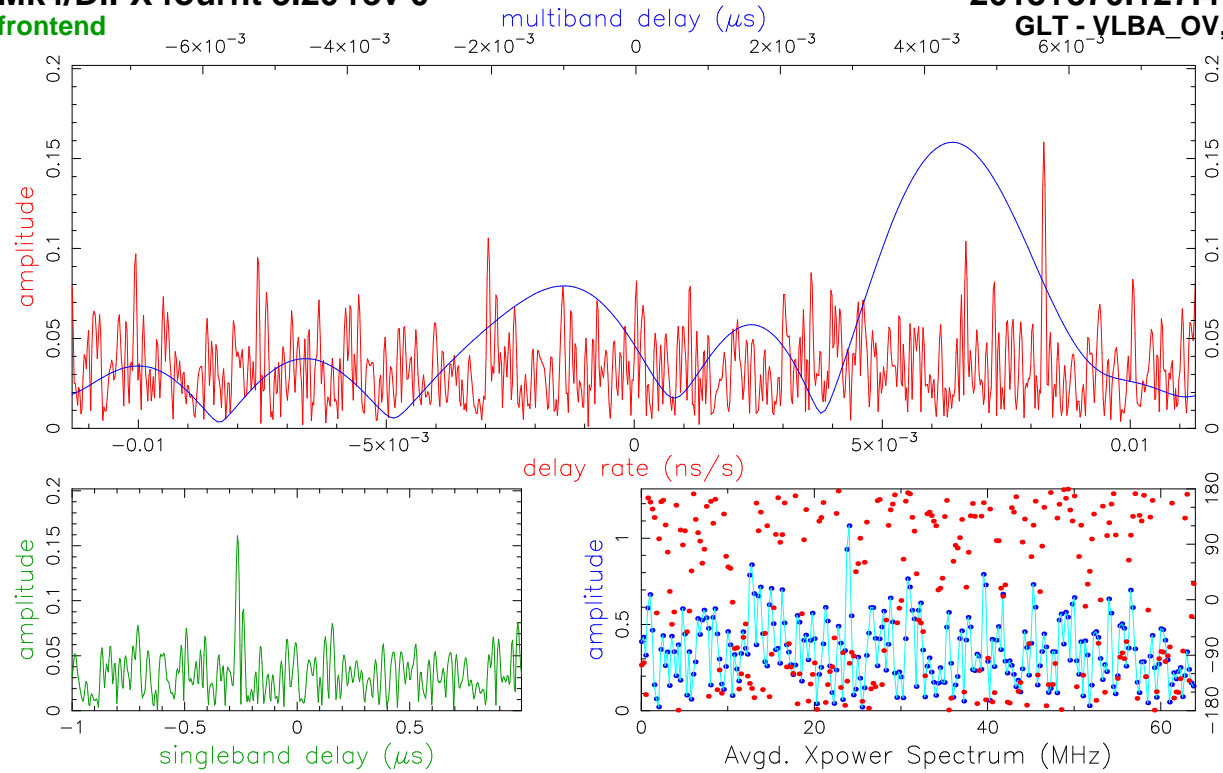


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
g	0	0	0	0	0	0	0	0		
o	1000	1000	1000	1000	1000	1000	1000	1000		
g:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
g:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
g	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
g	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)	-2.12147094773E+03									
Sband delay (usec)	-2.12146712688E+03									
Phase delay (usec)	-2.12094791566E+03									
Delay rate (us/s)	-6.60367941086E-01									
Total phase (deg)			-163.8							
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)									169.8	+/- 20.7
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
SampCntNorm: enabled									-0.008	0.008
mb window (us)									-0.011	0.011
dr window (ns/s)									0.00	0.00
ion window (TEC)									0.00	0.00
pcal $\theta$										

ph/seg (deg) 55.2 48.4  
 amp/seg (%) 70.6 84.5  
 ph/frq (deg) 32.8 29.2  
 amp/frq (%) 29.9 51.0

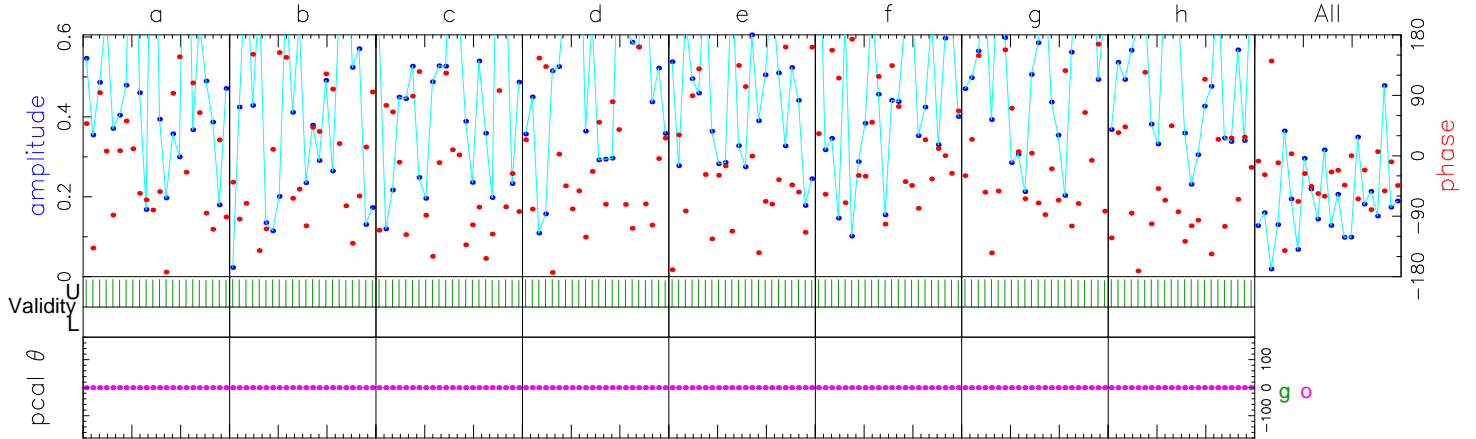
g: az 194.6 el 50.4 pa 4.2  
 o: az 78.2 el 60.0 pa -78.1  
 u,v (fr/asec) 4783.721 4739.839

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/go..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/go.W.178.12714G simultaneous interpolator



Fringe quality 0  
 SNR 5.9  
 Int time 178.378  
 Amp 0.202  
 Phase -42.9  
 PFD 4.4e-01  
 Delays (us)  
 SBD -0.264435  
 MBD 0.004394  
 Fringe rate (Hz)  
 0.712692  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132521  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec

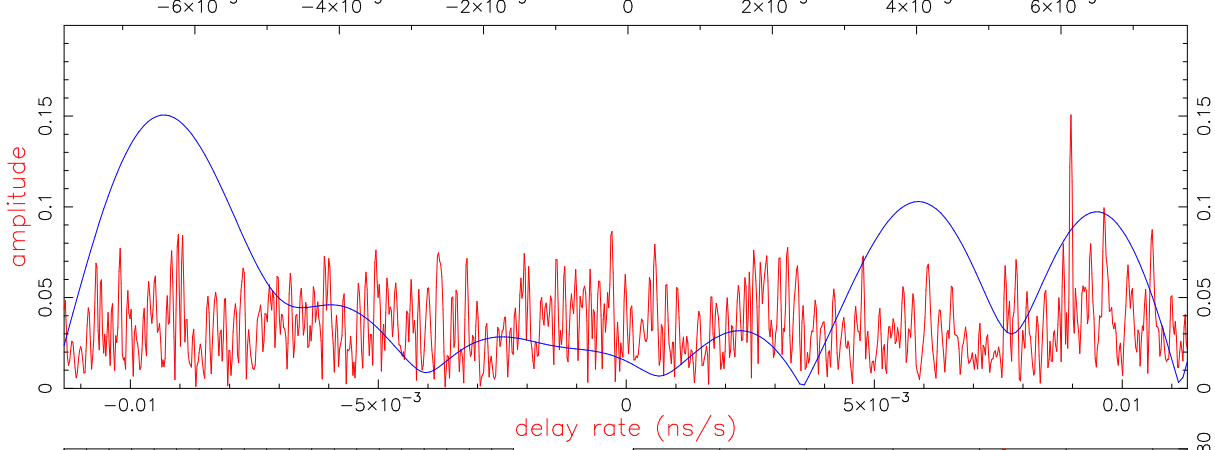


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	375.0	191.7	484.8	231.1	260.4	234.3	511.5	133.8		
g	0	0	0	0	0	0	0	0		
o	1000	1000	1000	1000	1000	1000	1000	1000		
g:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
g:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
g	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
g	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)	-2.12120915203E+03								4.39410E-03	+/- 1.9E-04
Sband delay (usec)	-2.12121235638E+03								-2.64435E-01	+/- 1.5E-03
Phase delay (usec)	-2.12094792252E+03								-1.38435E-06	+/- 6.3E-07
Delay rate (us/s)	-6.60367210100E-01								8.27365E-06	+/- 6.1E-09
Total phase (deg)			-16.4						-42.9	+/- 19.6
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)										
PC period (AP's) 5, 5										
sb window (us)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
Search (1024X32)										
Interp.										
Inc. seg. avg.										
Inc. frq. avg.										
Sample rate(MISamp/s): 128										
Data rate(Mb/s): 2048										
nlags: 256										
t_cohere infinite										
simultaneous interpolator										

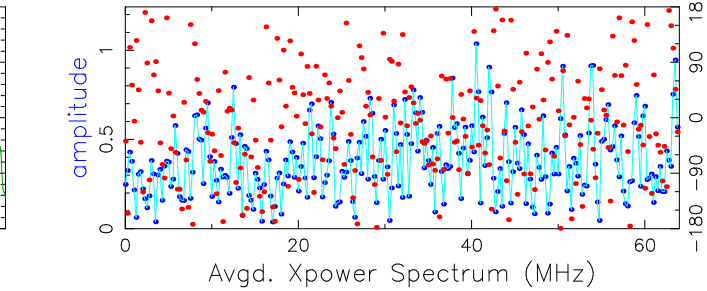
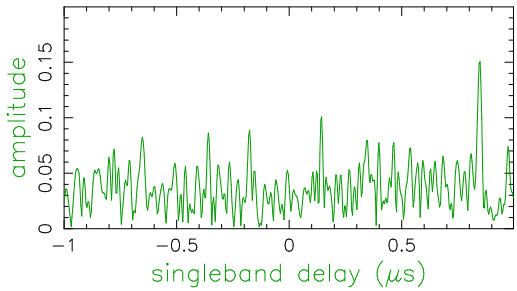
ph/seg (deg) 50.1 45.9  
 amp/seg (%) 69.4 80.0  
 ph/frq (deg) 28.5 27.7  
 amp/frq (%) 36.5 48.3  
 g: az 194.6 el 50.4 pa 4.2  
 o: az 78.2 el 60.0 pa -78.1  
 u,v (fr/asec) 4783.721 4739.839  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/go..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/go.W.196.12714G

multiband delay ( $\mu$ s)

Fringe quality 0

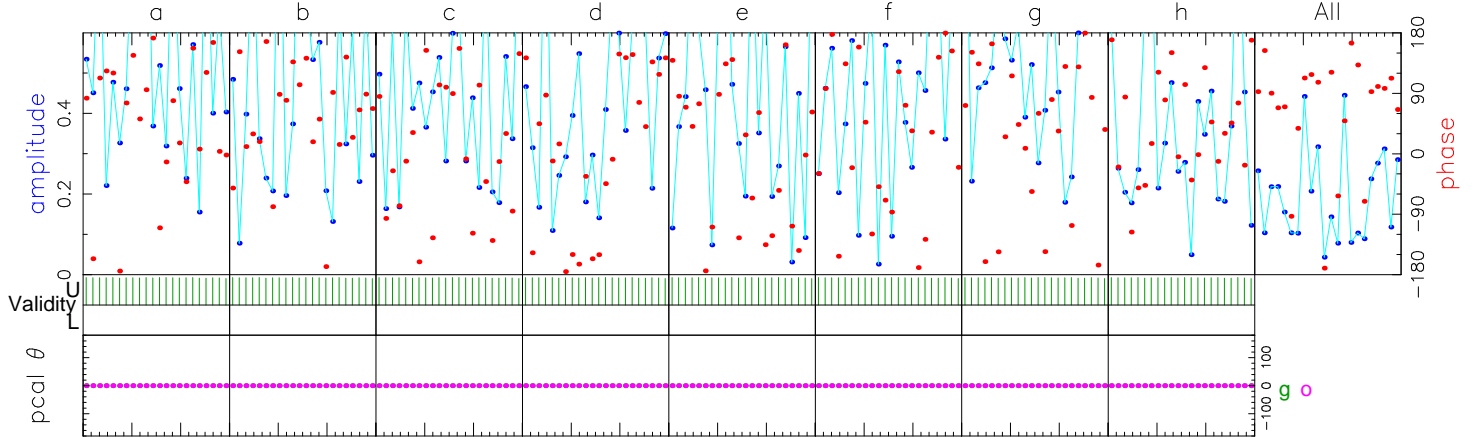


SNR 5.6  
 Int time 178.322  
 Amp 0.200  
 Phase 93.3  
 PFD 9.6e-01  
 Delays (us)  
 SBD 0.846061  
 MBD -0.006413  
 Fringe rate (Hz)  
 0.772703  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132523  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

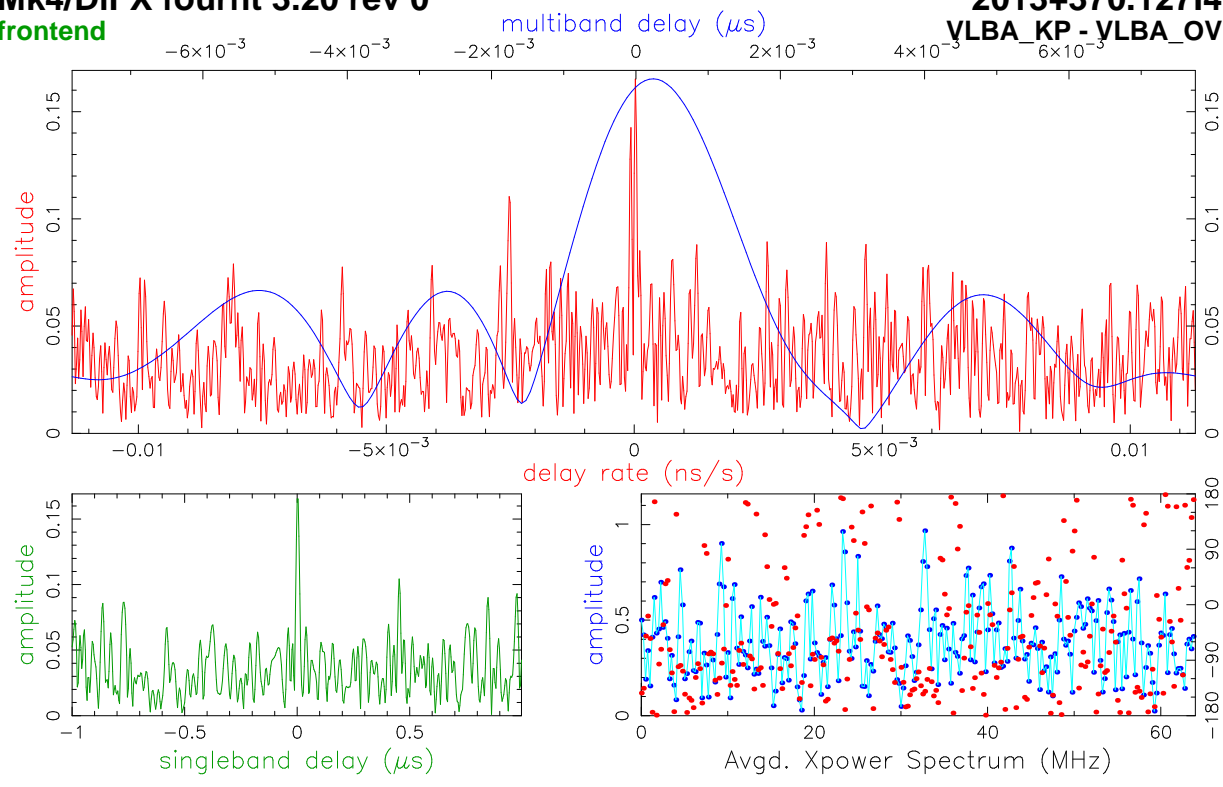
Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
g	0	0	0	0	0	0	0	0		
o	1000	1000	1000	1000	1000	1000	1000	1000		
g:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
g:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
g	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
g	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	-2.12009495893E+03									
Sband delay (usec)	-2.12010185988E+03									
Phase delay (usec)	-2.12094791812E+03									
Delay rate (us/s)	-6.60366513439E-01									
Total phase (deg)			-240.2							
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)									93.3	+/- 20.6
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)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
simultaneous interpolator										

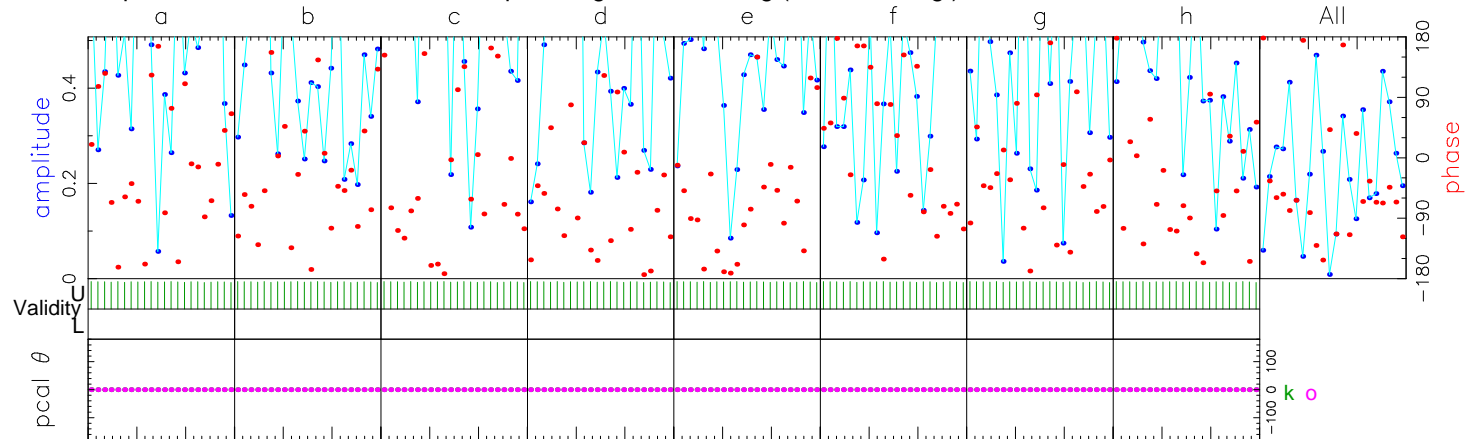
ph/seg (deg) 70.8 48.3 Search (1024X32) 0.149 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 79.6 84.3 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 34.5 29.1 Inc. seg. avg. 0.191 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 57.1 50.8 Inc. frq. avg. 0.196 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 194.6 el 50.4 pa 4.2 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 4783.721 4739.839 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/go..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/go.W.213.12714G





Fringe quality 0  
 SNR 6.2  
 Int time 177.578  
 Amp 0.169  
 Phase -82.4  
 PFD 8.8e-02  
 Delays (us)  
 SBD 0.001910  
 MBD 0.000201  
 Fringe rate (Hz) 0.000980  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132518  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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
	-51.3	-63.0	-139.9	-74.1	-80.9	-88.1	-70.1	-77.1	Phase	-82.4
	0.1	0.2	0.3	0.2	0.2	0.1	0.2	0.2	Ampl.	0.2
	178.3	158.0	256.3	138.3	60.8	246.9	331.4	507.8	Sbd box	257.5
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
k	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
k:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
k:o	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	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
k	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	6.52494509341E+02		Apriori delay (usec)		6.52494308416E+02		Resid mbdelay (usec)		2.00925E-04	+/- 1.8E-04
Sband delay (usec)	6.52496218666E+02		Apriori clock (usec)		-1.7069811E+01		Resid sbdelay (usec)		1.91025E-03	+/- 1.4E-03
Phase delay (usec)	6.52494305759E+02		Apriori clockrate (us/s)		-1.9555999E-07		Resid phdelay (usec)		-2.65672E-06	+/- 6.0E-07
Delay rate (us/s)	-6.15553910622E-02		Apriori rate (us/s)		-6.15554024373E-02		Resid rate (us/s)		1.13752E-08	+/- 5.8E-09
Total phase (deg)	179.3		Apriori accel (us/s/s)		-8.72746718919E-06		Resid phase (deg)		-82.4	+/- 18.6

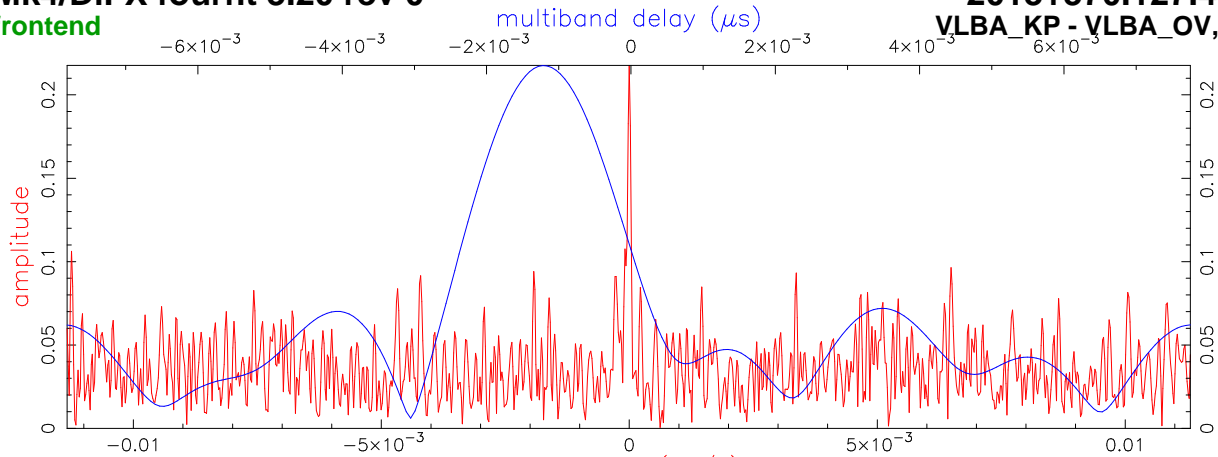
ph/seg (deg) 60.9 43.6 Search (1024X32) 0.158 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 83.0 76.1 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 28.7 26.3 Inc. seg. avg. 0.182 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 32.1 45.9 Inc. frq. avg. 0.168 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 k: az 69.6 el 63.8 pa -92.2 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 435.229 -1057.526 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/ko..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/ko.W.173.12714G

# Mk4/DiFX fourfit 3.20 rev 0

frontend

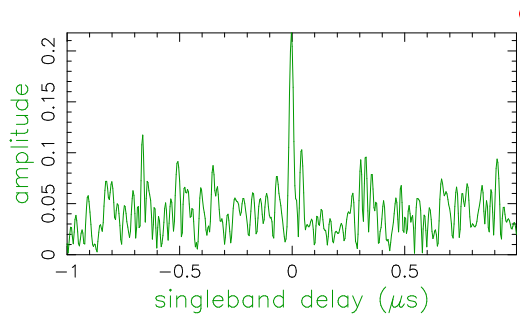
## 2013+370.12714G, No0070, ko

VLBA\_KP - VLBA\_OV, fgroup W, pol RR

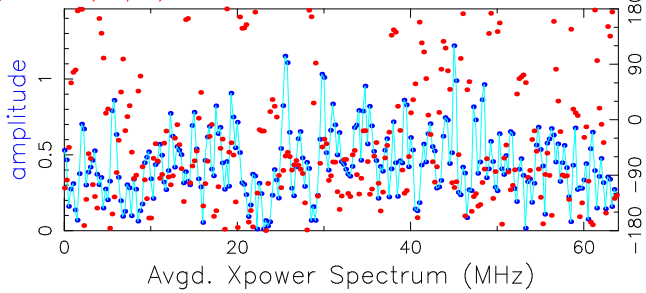


Fringe quality 9

SNR 7.9  
 Int time 177.578  
 Amp 0.218  
 Phase -118.0  
 PFD 3.6e-07  
 Delays (us)  
 SBD -0.003595  
 MBD -0.001201  
 Fringe rate (Hz) 0.000291  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512

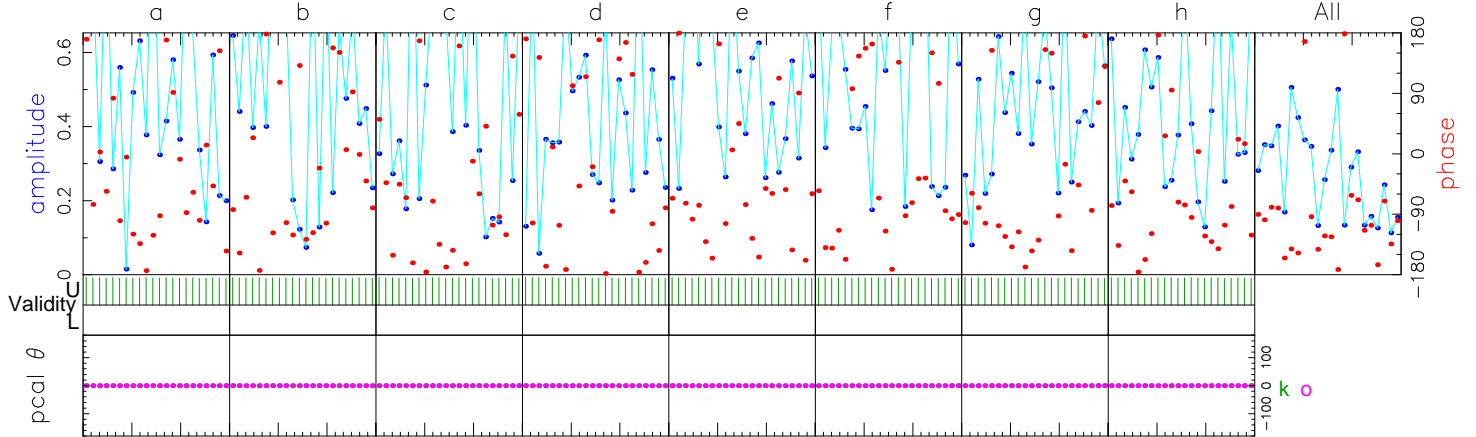


delay rate (ns/s)



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132520  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec

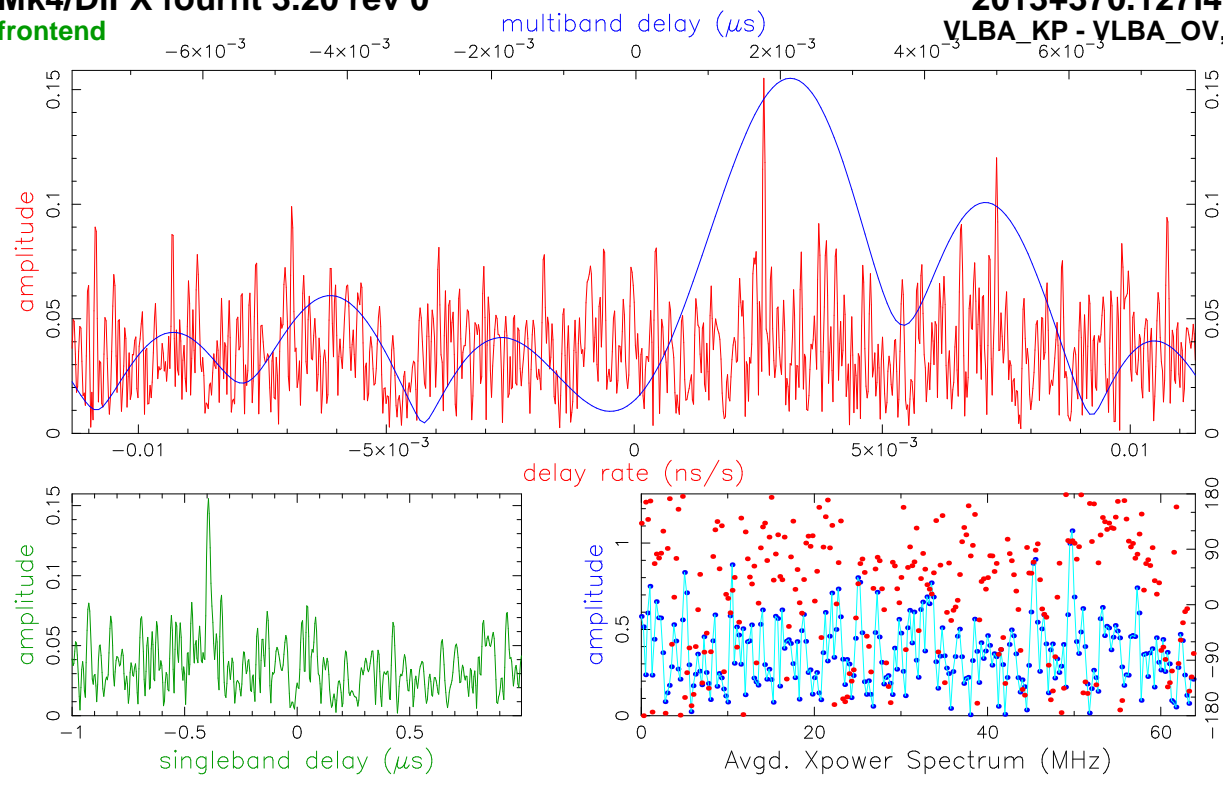


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
k	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
k:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
k:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
k	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
k	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)		6.52493107853E+02				6.52494308416E+02			Resid mbdelay (usec)	-1.20056E-03 +/- 1.4E-04
Sband delay (usec)		6.52490713666E+02				-1.7069811E+01			Resid sbdelay (usec)	-3.59475E-03 +/- 1.1E-03
Phase delay (usec)		6.52494304611E+02				-1.9555999E-07			Resid phdelay (usec)	-3.80495E-06 +/- 4.7E-07
Delay rate (us/s)		-6.15553990575E-02				-6.15554024373E-02			Resid rate (us/s)	3.37982E-09 +/- 4.5E-09
Total phase (deg)			143.7			-8.72746718919E-06			Resid phase (deg)	-118.0 +/- 14.4
ph/seg (deg)	RMS 37.8	Theor. 33.9	Amplitude 0.218 +/- 0.027	Search (1024X32) 0.212	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5			sb window (us)	-1.000 1.000
amp/seg (%)	62.0	59.1	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)	23.5	20.4	Inc. seg. avg. 0.236		Bits/sample: 2x2	Sample rate(MISamp/s): 128			dr window (ns/s)	-0.011 0.011
amp/frq (%)	18.1	35.7	Inc. frq. avg. 0.217		Data rate(Mb/s): 2048	nlags: 256 t_cohere infinite			ion window (TEC)	0.00 0.00

k: az 69.6 el 63.8 pa -92.2 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 435.229 -1057.526 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/ko..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/ko.W.189.12714G

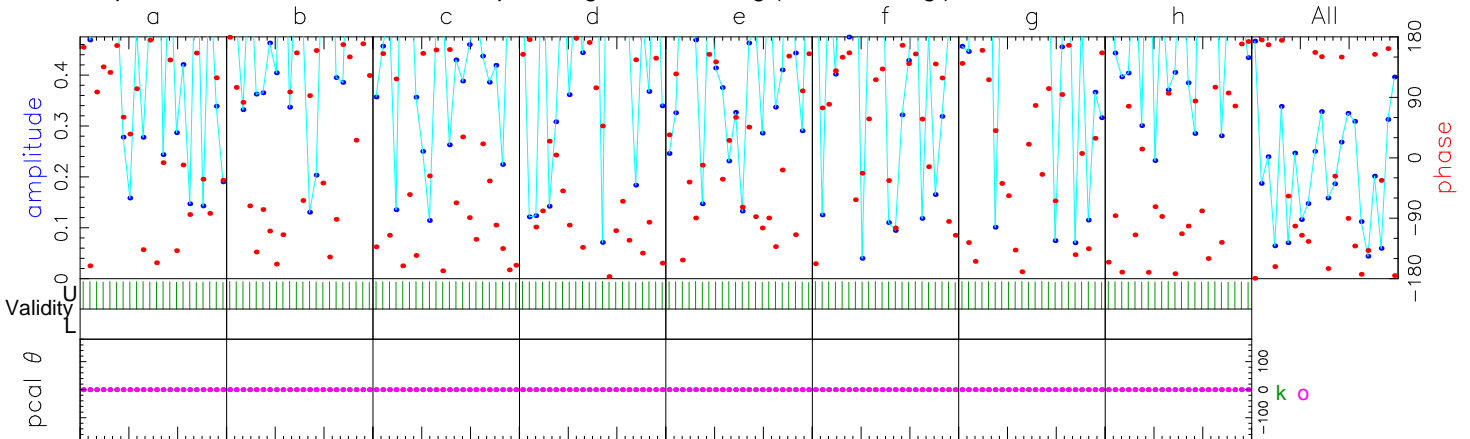
Mk4/DiFX fourfit 3.20 rev 0  
 frontend

2013+370.12714G, No0070, ko  
 VLBA\_KP - VLBA\_OV, fgroup W, pol LR



Fringe quality 0  
 SNR 5.6  
 Int time 177.578  
 Amp 0.158  
 Phase -168.6  
 PFD 8.6e-01  
 Delays (us)  
 SBD -0.394652  
 MBD 0.002138  
 Fringe rate (Hz) 0.224487  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132522  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
k	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
k:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
k:o	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	
o	1000	1000	1000	1000	1000	1000	1000	1000		
k	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	6.52105821056E+02		Apriori delay (usec)		6.52494308416E+02		Resid mbdelay (usec)		2.13764E-03	+/- 1.9E-04
Sband delay (usec)	6.52099656666E+02		Apriori clock (usec)		-1.7069811E+01		Resid sbdelay (usec)		-3.94652E-01	+/- 1.5E-03
Phase delay (usec)	6.52494302978E+02		Apriori clockrate (us/s)		-1.9555999E-07		Resid phdelay (usec)		-5.43782E-06	+/- 6.5E-07
Delay rate (us/s)	-6.15527963695E-02		Apriori rate (us/s)		-6.15554024373E-02		Resid rate (us/s)		2.60607E-06	+/- 6.3E-09
Total phase (deg)	93.1		Apriori accel (us/s/s)		-8.72746718919E-06		Resid phase (deg)		-168.6	+/- 20.3

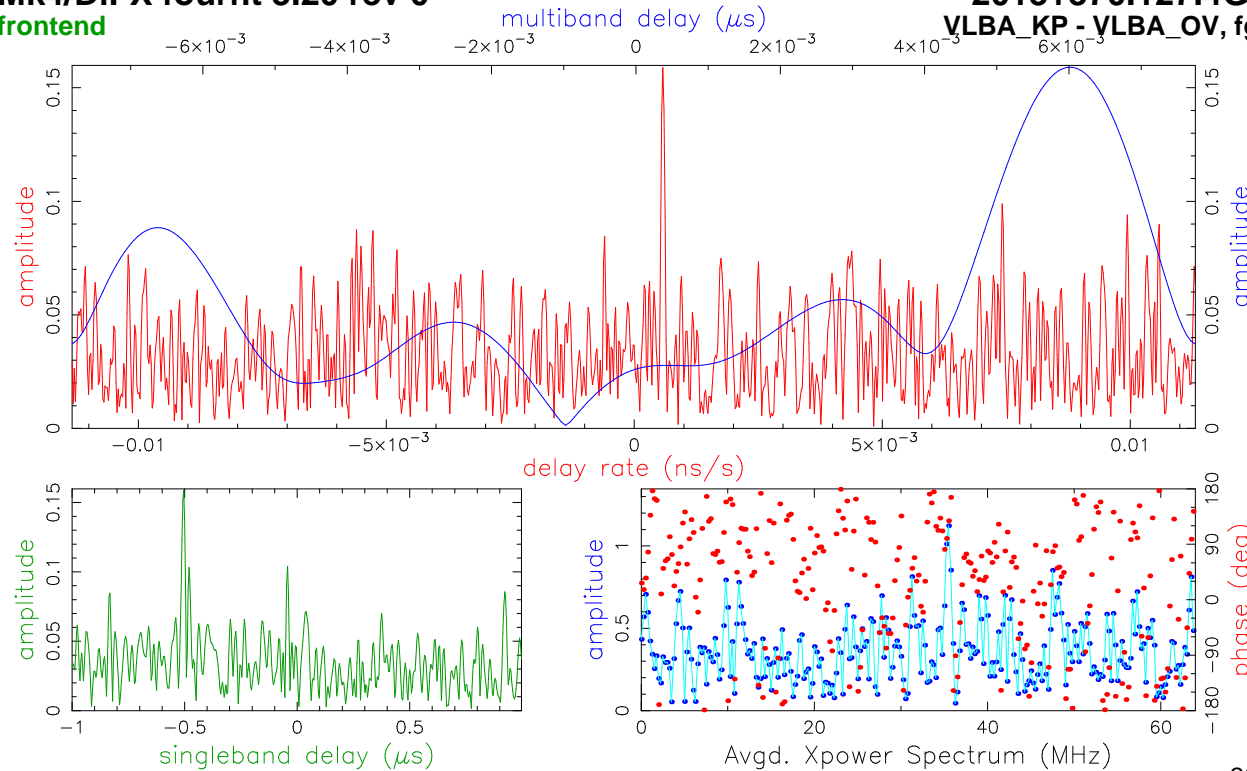
ph/seg (deg) 59.1 47.6 Search (1024X32) 0.150 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 84.6 83.1 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 35.2 28.7 Inc. seg. avg. 0.167 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 40.8 50.1 Inc. frq. avg. 0.160 Sample rate(MISamp/s): 128 Data rate (Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 k: az 69.6 el 63.8 pa -92.2 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 435.229 -1057.526 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/ko..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/ko.W.210.12714G

# Mk4/DiFX fourfit 3.20 rev 0

frontend

## 2013+370.12714G, No0070, ko

VLBA\_KP - VLBA\_OV, fgroup W, pol RL

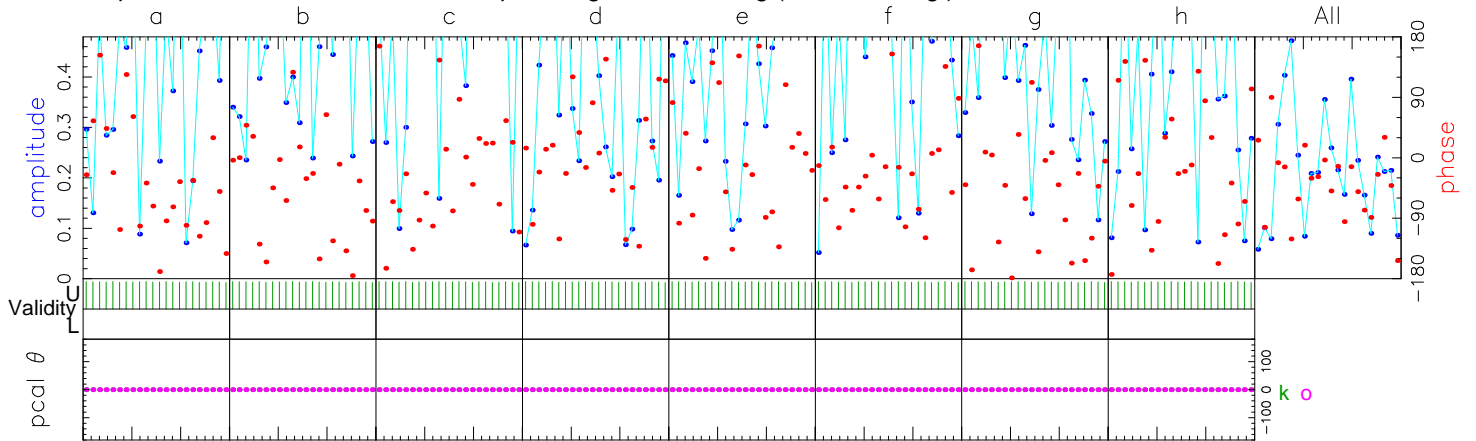


Fringe quality 0

SNR 5.8  
 Int time 177.578  
 Amp 0.160  
 Phase -35.8  
 PFD 5.3e-01  
 Delays (us)  
 SBD -0.504810  
 MBD 0.005958  
 Fringe rate (Hz) 0.050217  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512

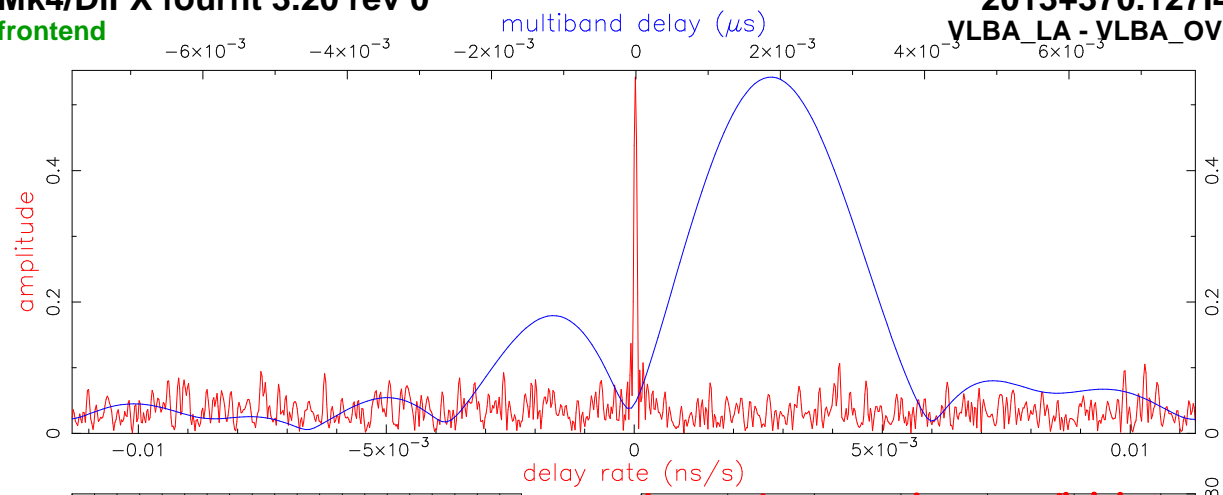
Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132526  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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
	-69.4	-37.7	-42.9	22.4	7.3	-48.2	-63.8	-17.4	Phase	-35.8
	0.2	0.2	0.2	0.2	0.1	0.3	0.2	0.1	Ampl.	0.2
	373.1	302.8	126.9	190.2	17.6	134.2	18.2	245.8	Sbd box	127.8
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
k	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
k:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
k:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
k	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
k	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	6.51984641894E+02		Apriori delay (usec)		6.52494308416E+02		Resid mbdelay (usec)		5.95848E-03	+/- 1.9E-04
Sband delay (usec)	6.51989498666E+02		Apriori clock (usec)		-1.7069811E+01		Resid sbdelay (usec)		-5.04810E-01	+/- 1.5E-03
Phase delay (usec)	6.52494307261E+02		Apriori clockrate (us/s)		-1.9555999E-07		Resid phdelay (usec)		-1.15492E-06	+/- 6.4E-07
Delay rate (us/s)	-6.15548194716E-02		Apriori rate (us/s)		-6.1554024373E-02		Resid rate (us/s)		5.82966E-07	+/- 6.1E-09
Total phase (deg)	225.9		Apriori accel (us/s/s)		-8.72746718919E-06		Resid phase (deg)		-35.8	+/- 19.7

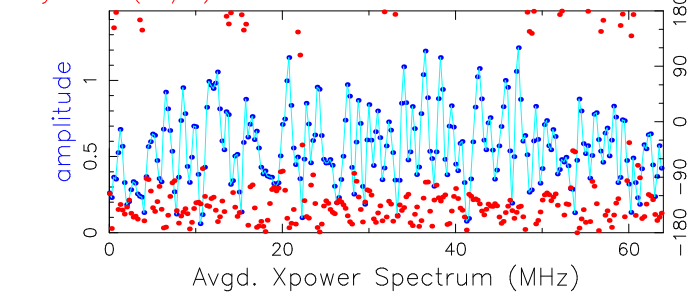
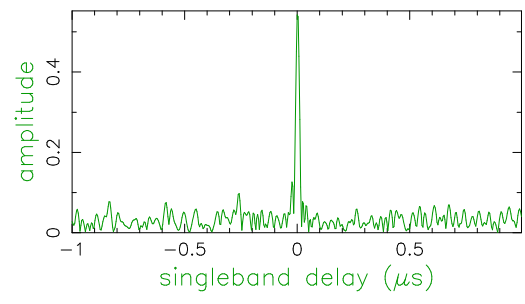
ph/seg (deg) 54.3 46.2 Amplitude 0.160 +/- 0.027 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 79.0 80.6 Search (1024X32) 0.155 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 35.8 27.9 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 37.6 48.6 Inc. seg. avg. 0.165 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 k: az 69.6 el 63.8 pa -92.2 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 435.229 -1057.526 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/ko..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/ko.W.232.12714G simultaneous interpolator



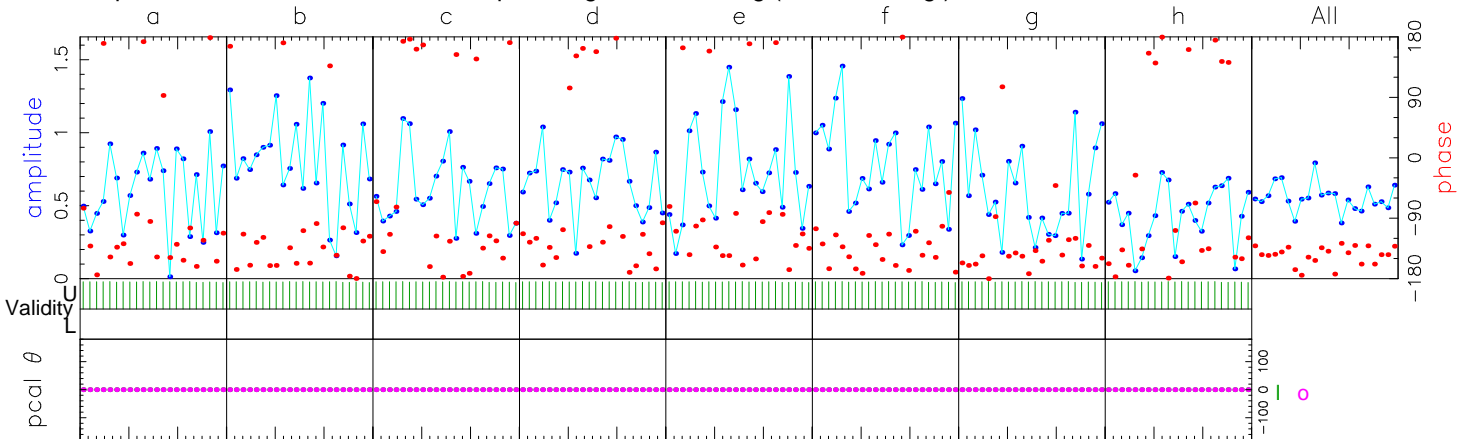
Fringe quality 9

SNR 20.1  
Int time 177.864  
Amp 0.552  
Phase -144.8  
PFD 0.0e+00  
Delays (us)  
SBD 0.001762  
MBD 0.001890  
Fringe rate (Hz) 0.002078  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512

Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 004000.00  
Stop 004300.22  
FRT 004130.00  
Corr/FF/build  
2020:070:101629  
2020:071:132529  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"



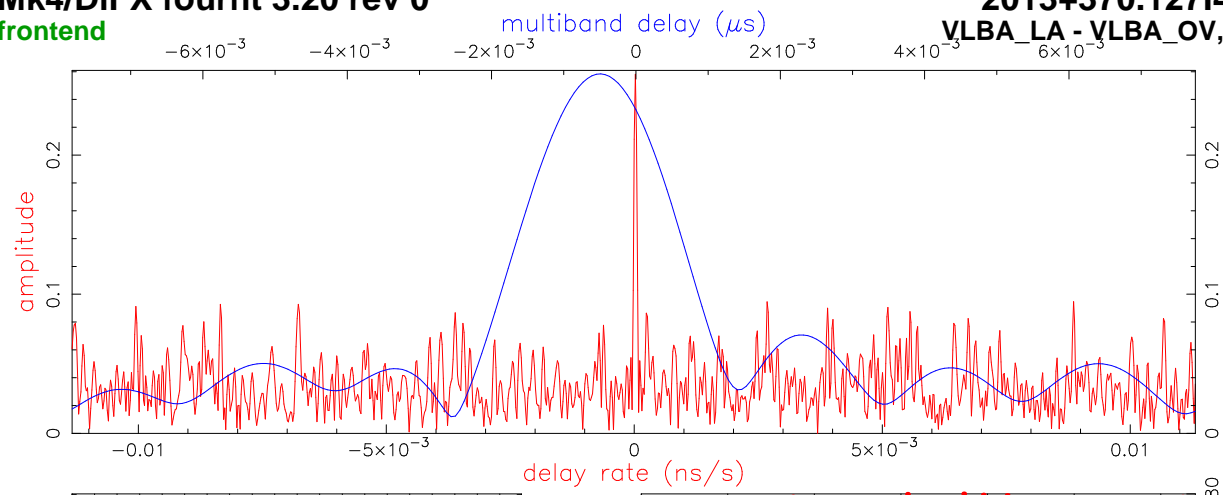
Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



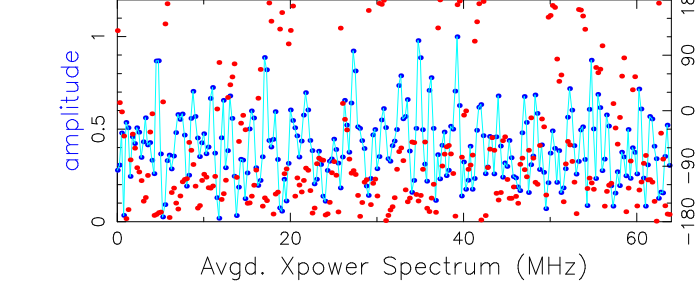
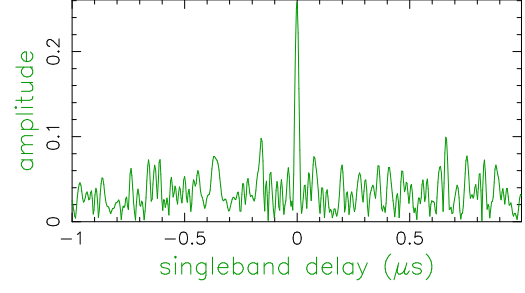
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
l	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
l:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
l:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
l	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
l	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	1.43373256904E+03	1.43373244046E+03	1.43373067404E+03	1.43373067871E+03	1.43373067871E+03	1.43373067871E+03	1.43373067871E+03	1.43373067871E+03	1.89033E-03	+/- 5.4E-05
Sband delay (usec)	1.43373244046E+03	1.43373244046E+03	1.43373067404E+03	1.43373067871E+03	1.43373067871E+03	1.43373067871E+03	1.43373067871E+03	1.43373067871E+03	1.76175E-03	+/- 4.3E-04
Phase delay (usec)	1.43373067404E+03	1.43373067404E+03	1.43373067404E+03	1.43373067404E+03	1.43373067404E+03	1.43373067404E+03	1.43373067404E+03	1.43373067404E+03	-4.67037E-06	+/- 1.8E-07
Delay rate (us/s)	-1.67811393992E-01	-1.67811393992E-01	-1.67811393992E-01	-1.67811393992E-01	-1.67811393992E-01	-1.67811393992E-01	-1.67811393992E-01	-1.67811393992E-01	2.41193E-08	+/- 1.8E-09
Total phase (deg)			94.3						-144.8	+/- 5.7
Apriori delay (usec)				0.540	0.540	0.540	0.540	0.540		
Apriori clock (usec)										
Apriori clockrate (us/s)										
Apriori rate (us/s)										
Apriori accel (us/s/s)										
RMS	13.5	13.3	13.3	13.5	13.5	13.5	13.5	13.5		
ph/seg (deg)	13.5	13.3	13.3	13.5	13.5	13.5	13.5	13.5		
amp/seg (%)	16.7	23.3	23.3	16.7	16.7	16.7	16.7	16.7		
ph/frq (deg)	12.0	8.0	8.0	12.0	12.0	12.0	12.0	12.0		
amp/frq (%)	20.5	14.0	14.0	20.5	20.5	20.5	20.5	20.5		
PCal mode:	MANUAL	MANUAL	MANUAL	MANUAL	MANUAL	MANUAL	MANUAL	MANUAL		
PCal rate:	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00		
Bits/sample:	2x2	2x2	2x2	2x2	2x2	2x2	2x2	2x2		
Sample rate (MSamp/s):	128	128	128	128	128	128	128	128		
Data rate (Mb/s):	2048	2048	2048	2048	2048	2048	2048	2048		
PC period (AP's)	5	5	5	5	5	5	5	5		
sb window (us)	-1.000	1.000	-1.000	1.000	-1.000	1.000	-1.000	1.000		
mb window (us)	-0.008	0.008	-0.008	0.008	-0.008	0.008	-0.008	0.008		
dr window (ns/s)	-0.011	0.011	-0.011	0.011	-0.011	0.011	-0.011	0.011		
ion window (TEC)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

l: az 78.2 el 69.2 pa -86.2 o: az 78.2 el 60.0 pa -78.1 u, v (fr/asec) 1200.172 -694.598 simultaneous interpolator

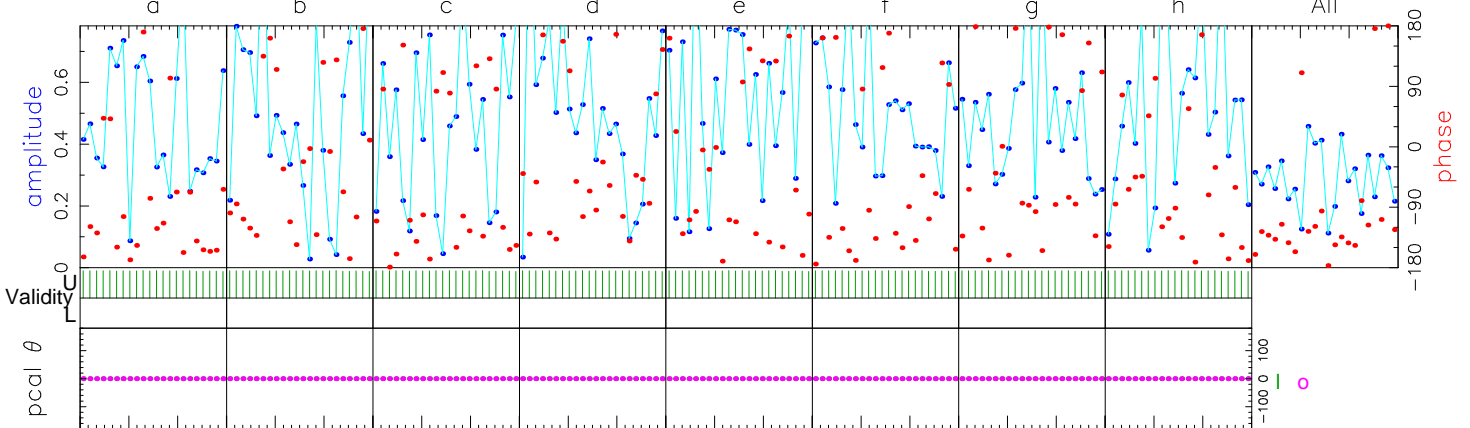
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/lo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/lo.W.244.12714G



Fringe quality 9  
SNR 9.5  
Int time 177.864  
Amp 0.261  
Phase -133.9  
PFD 3.6e-13  
Delays (us)  
SBD -0.001363  
MBD -0.000541  
Fringe rate (Hz) 0.002177  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 004000.00  
Stop 004300.22  
FRT 004130.00  
Corr/FF/build  
2020:070:101629  
2020:071:132531  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"



Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec

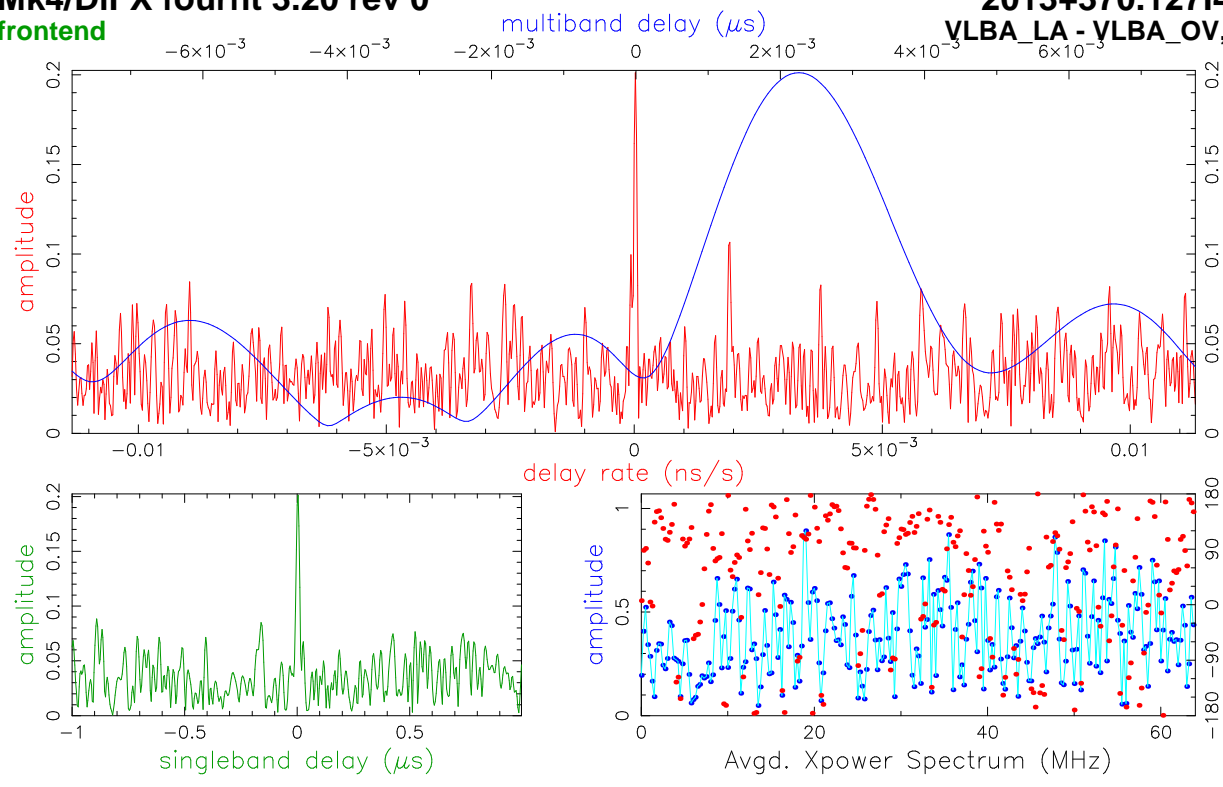


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-128.5	-128.2	-152.9	-122.5	-138.2	-150.0	-130.9	-111.6	Phase	-133.9
	0.3	0.2	0.3	0.2	0.3	0.3	0.3	0.2	Ampl.	0.3
	257.1	161.1	256.2	256.8	362.7	256.5	10.5	171.2	Sbd box	256.7
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
l	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
l:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
l:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
l	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
l	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	1.43373013776E+03		Apriori delay (usec)		1.43373067871E+03		Resid mbdelay (usec)		-5.40950E-04	+/- 1.1E-04
Sband delay (usec)	1.43372931621E+03		Apriori clock (usec)		-1.7438719E+01		Resid sbdelay (usec)		-1.36250E-03	+/- 9.1E-04
Phase delay (usec)	1.43373067440E+03		Apriori clockrate (us/s)		-3.5245298E-07		Resid phdelay (usec)		-4.31791E-06	+/- 3.9E-07
Delay rate (us/s)	-1.67811392844E-01		Apriori rate (us/s)		-1.67811418111E-01		Resid rate (us/s)		2.52672E-08	+/- 3.7E-09
Total phase (deg)	105.3		Apriori accel (us/s/s)		-9.10680542650E-06		Resid phase (deg)		-133.9	+/- 12.0

ph/seg (deg) 35.5 28.2 Search (1024X32) 0.257 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 37.5 49.3 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 14.9 17.0 Inc. seg. avg. 0.259 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 11.4 29.7 Inc. frq. avg. 0.254 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
l: az 78.2 el 69.2 pa -86.2 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 1200.172 -694.598 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/lo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/lo.W.262.12714G

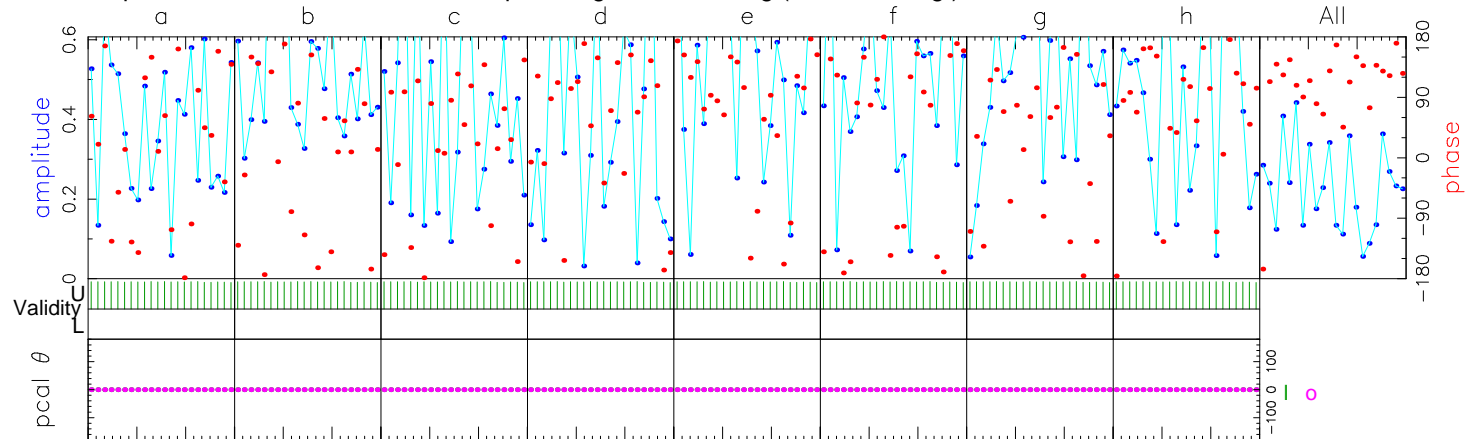
Mk4/DiFX fourfit 3.20 rev 0  
frontend

2013+370.12714G, No0070, lo  
VLBA\_LA - VLBA\_OV, fgroup W, pol LR



Fringe quality 9  
SNR 7.4  
Int time 177.864  
Amp 0.202  
Phase 123.6  
PFD 2.4e-05  
Delays (us)  
SBD 0.002891  
MBD 0.002227  
Fringe rate (Hz) 0.002415  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 004000.00  
Stop 004300.22  
FRT 004130.00  
Corr/FF/build  
2020:070:101629  
2020:071:132533  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
l	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
l:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
l:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
l	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
l	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)		1.43373290551E+03				1.43373067871E+03			Resid mbdelay (usec)	2.22680E-03 +/- 1.5E-04
Sband delay (usec)		1.43373356946E+03				-1.7438719E+01			Resid sbdelay (usec)	2.89075E-03 +/- 1.2E-03
Phase delay (usec)		1.43373068270E+03				-3.5245298E-07			Resid phdelay (usec)	3.98496E-06 +/- 5.0E-07
Delay rate (us/s)		-1.67811390070E-01				-1.67811418111E-01			Resid rate (us/s)	2.80405E-08 +/- 4.8E-09
Total phase (deg)			2.7			-9.10680542650E-06			Resid phase (deg)	123.6 +/- 15.5

ph/seg (deg) 34.8 36.4  
amp/seg (%) 54.5 63.5  
ph/frq (deg) 26.6 21.9  
amp/frq (%) 41.6 38.3  
RMS Theor. Amplitude 0.202 +/- 0.027  
Search (1024X32) 0.196  
Interp. 0.000  
Inc. seg. avg. 0.193  
Inc. frq. avg. 0.204  
Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
Pcal rate: 0.000E+00, 0.000E+00 (us/s)  
Bits/sample: 2x2 SampCntNorm: enabled  
Sample rate(MISamp/s): 128  
Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite  
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  
l: az 78.2 el 69.2 pa -86.2 o: az 78.2 el 60.0 pa -78.1 u, v (fr/asec) 1200.172 -694.598 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/lo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/lo.W.279.12714G

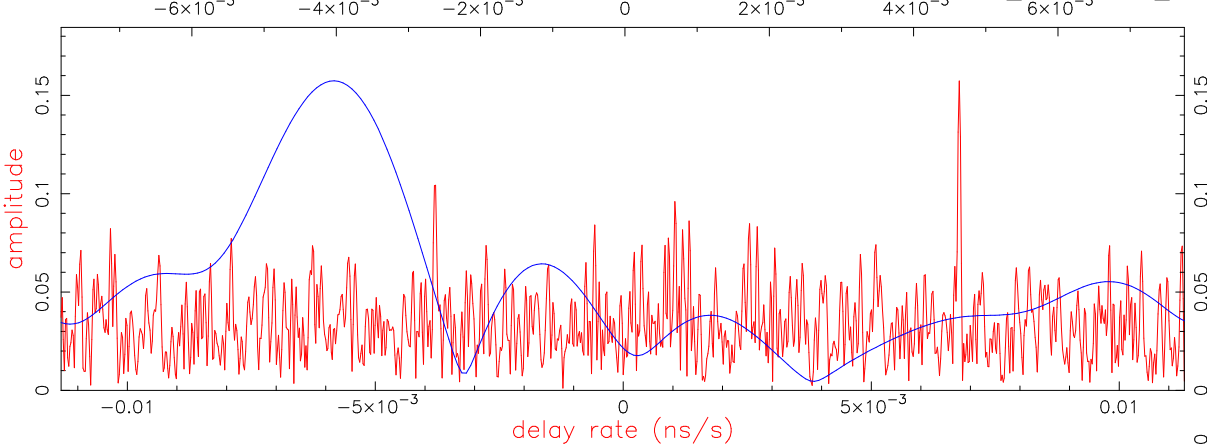
Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.12714G, No0070, lo

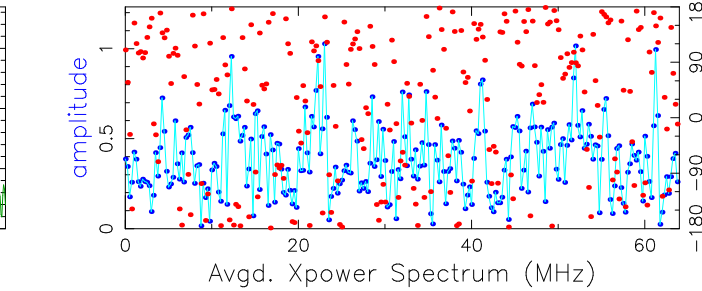
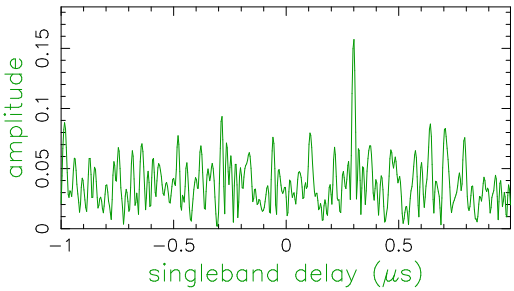
VLBA\_LA - VLBA\_OV, fgroup W, pol RL

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



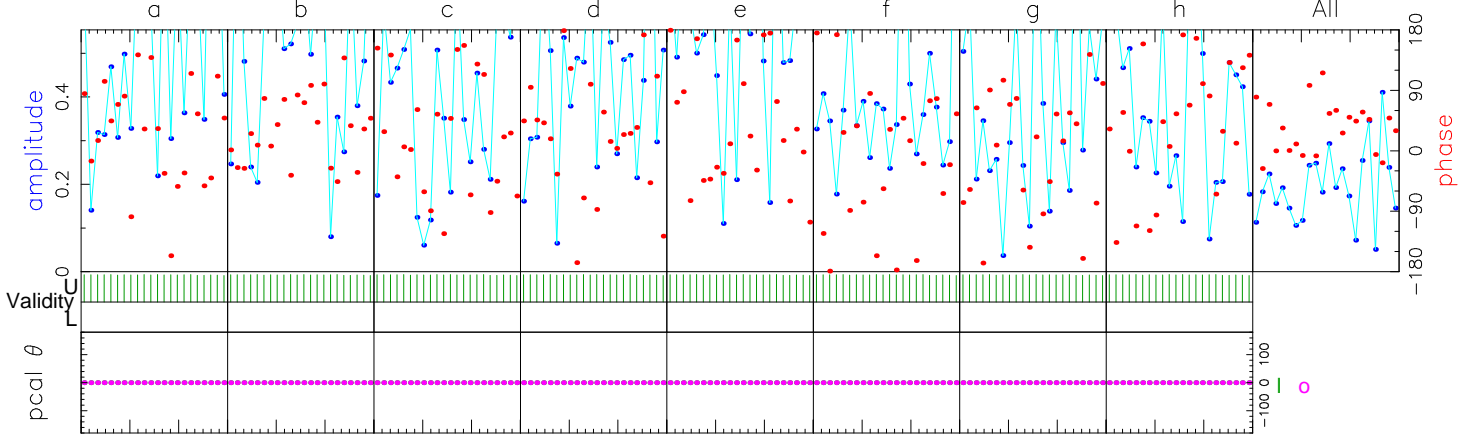
Fringe quality 0

SNR 5.8  
Int time 177.865  
Amp 0.185  
Phase 35.5  
PFD 6.0e-01  
Delays (us)  
SBD 0.299722  
MBD -0.004076  
Fringe rate (Hz)  
0.584201  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512



Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 004000.00  
Stop 004300.22  
FRT 004130.00  
Corr/FF/build  
2020:070:101629  
2020:071:132535  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
l	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
l:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
l:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
l	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
l	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		

Group delay (usec)(sbd)	1.43402347769E+03	Apriori delay (usec)	1.43373067871E+03	Resid mbdelay (usec)	-4.07603E-03	+/-	1.9E-04
Sband delay (usec)	1.43403040121E+03	Apriori clock (usec)	-1.7438719E+01	Resid sbdelay (usec)	2.99722E-01	+/-	1.5E-03
Phase delay (usec)	1.43373067986E+03	Apriori clockrate (us/s)	-3.5245298E-07	Resid phdelay (usec)	1.14370E-06	+/-	6.4E-07
Delay rate (us/s)	-1.67804636113E-01	Apriori rate (us/s)	-1.67811418111E-01	Resid rate (us/s)	6.78200E-06	+/-	6.1E-09
Total phase (deg)	274.6	Apriori accel (us/s/s)	-9.10680542650E-06	Resid phase (deg)	35.5	+/-	19.8

ph/seg (deg)	37.4	Theor.	46.5	Amplitude	0.185 +/- 0.032	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5			
amp/seg (%)	58.1		81.1	Search (1024X32)	0.152	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000			
ph/frq (deg)	23.3		28.0	Inc. seg. avg.	0.172	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008		
amp/frq (%)	50.7		48.9	Inc. frq. avg.	0.172	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

l: az 78.2 el 69.2 pa -86.2 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 1200.172 -694.598 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/lo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/lo.W.298.12714G

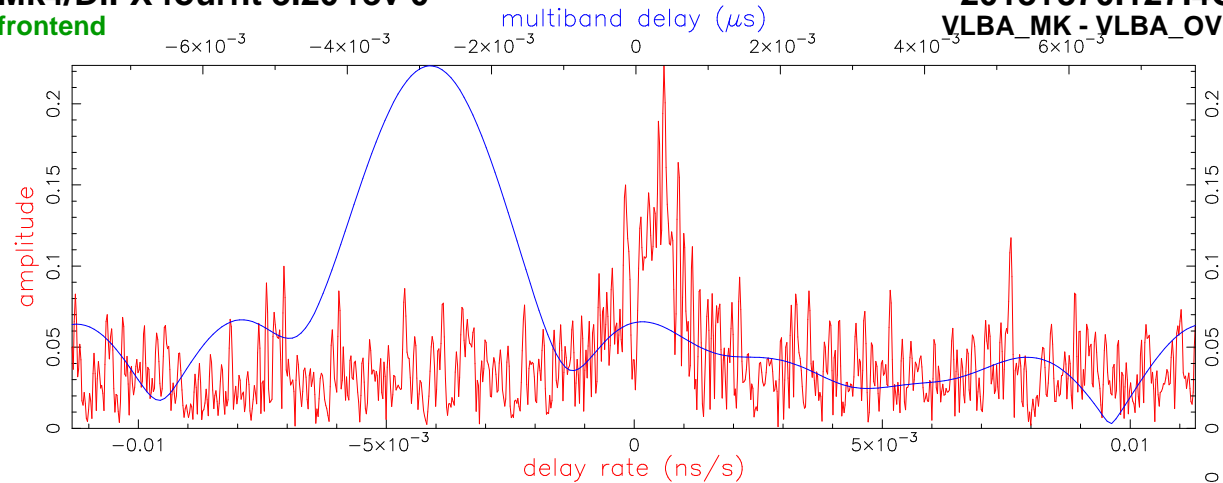


Mk4/DiFX fourfit 3.20 rev 0

frontend

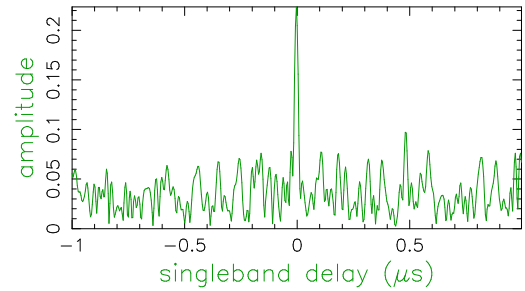
2013+370.12714G, No0070, mo

VLBA\_MK - VLBA\_OV, fgroup W, pol LL

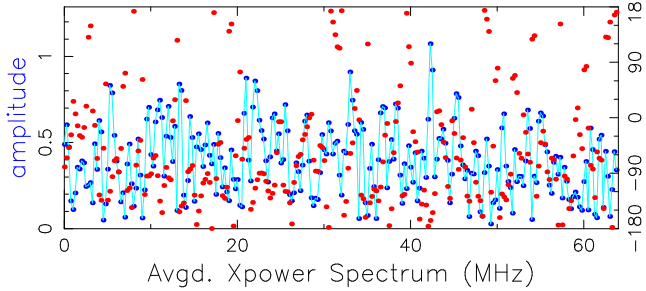


Fringe quality 9

SNR 8.1  
 Int time 177.292  
 Amp 0.224  
 Phase -103.8  
 PFD 7.2e-08  
 Delays (us)  
 SBD -0.003915  
 MBD -0.002851  
 Fringe rate (Hz) 0.051647  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512

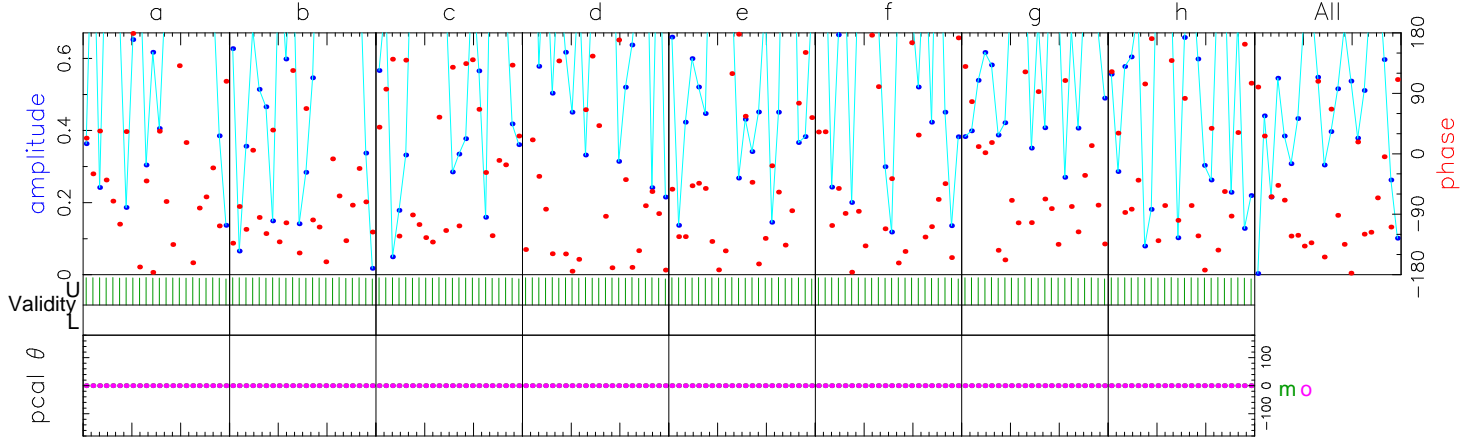


delay rate (ns/s)



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132529  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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
	-84.6	-97.5	-123.4	-128.5	-115.0	-114.0	-66.0	-97.0	Phase	-103.8
	0.3	0.3	0.1	0.3	0.3	0.2	0.2	0.2	Ampl.	0.2
	3.0	256.1	208.7	256.3	256.8	110.5	404.6	253.4	Sbd box	256.0
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
m	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
m:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
m:o	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	
o	1000	1000	1000	1000	1000	1000	1000	1000		
m	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd)	-9.93260021974E+03	Apriori delay (usec)	-9.93259736896E+03	Resid mbdelay (usec)	-2.85078E-03	+/-	1.3E-04
Sband delay (usec)	-9.93260128396E+03	Apriori clock (usec)	-1.4071626E+01	Resid sbdelay (usec)	-3.91500E-03	+/-	1.1E-03
Phase delay (usec)	-9.93259737230E+03	Apriori clockrate (us/s)	-9.6732924E-09	Resid phdelay (usec)	-3.34809E-06	+/-	4.5E-07
Delay rate (us/s)	5.21800682772E-01	Apriori rate (us/s)	5.21800083200E-01	Resid rate (us/s)	5.99572E-07	+/-	4.4E-09
Total phase (deg)	-234.1	Apriori accel (us/s/s)	3.45940793611E-05	Resid phase (deg)	-103.8	+/-	14.1

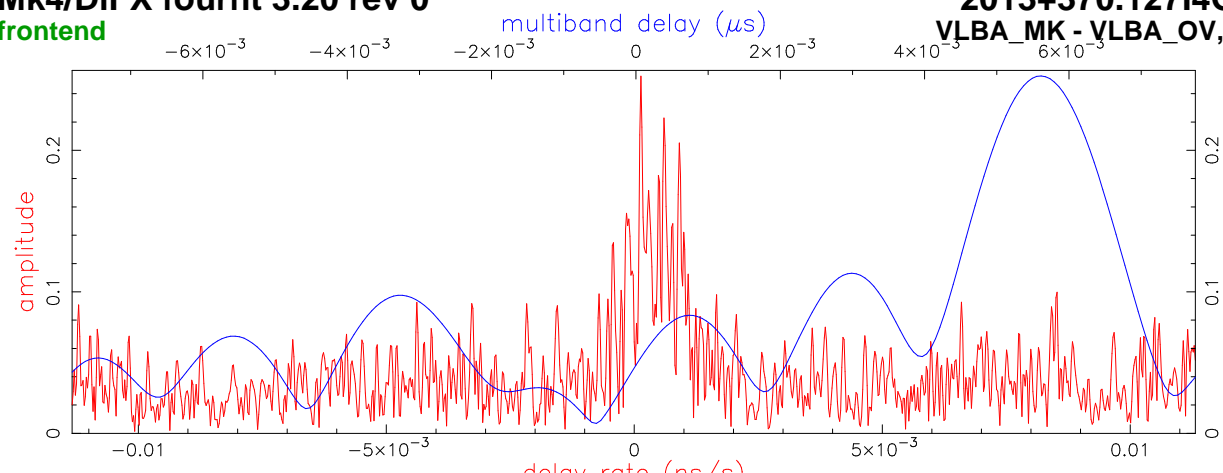
ph/seg (deg)	RMS 84.7	Theor. 33.0	Amplitude Search (1024X32)	0.224 +/- 0.027	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000	
amp/seg (%)	148.2	57.7	Interp.	0.000	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	SampCntNorm: enabled	mb window (us)	-0.008	0.008	
ph/frq (deg)	22.8	19.9	Inc. seg. avg.	0.405	Bits/sample: 2x2	Sample rate(MISamp/s): 128	dr window (ns/s)	-0.011	0.011	
amp/frq (%)	28.8	34.8	Inc. frq. avg.	0.223	Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00	0.00

m: az 57.0 el 23.4 pa -82.2 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) -3731.611 213.866 simultaneous interpolator

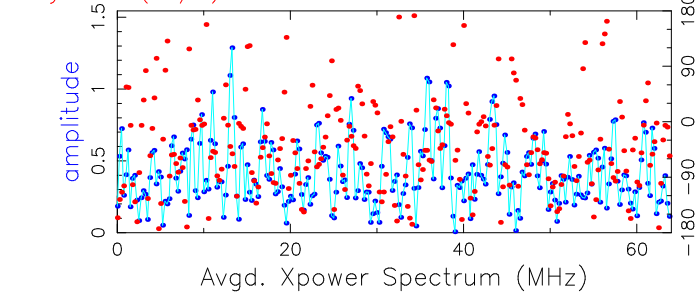
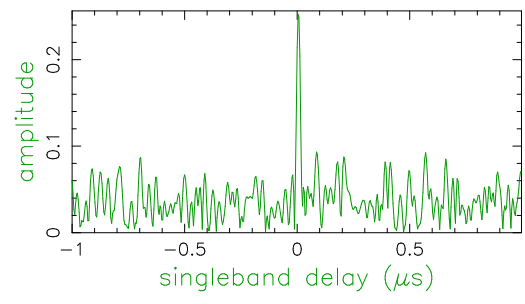
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/mo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/mo.W.250.12714G

Mk4/DiFX fourfit 3.20 rev 0  
 frontend

2013+370.12714G, No0070, mo  
 VLBA\_MK - VLBA\_OV, fgroup W, pol RR

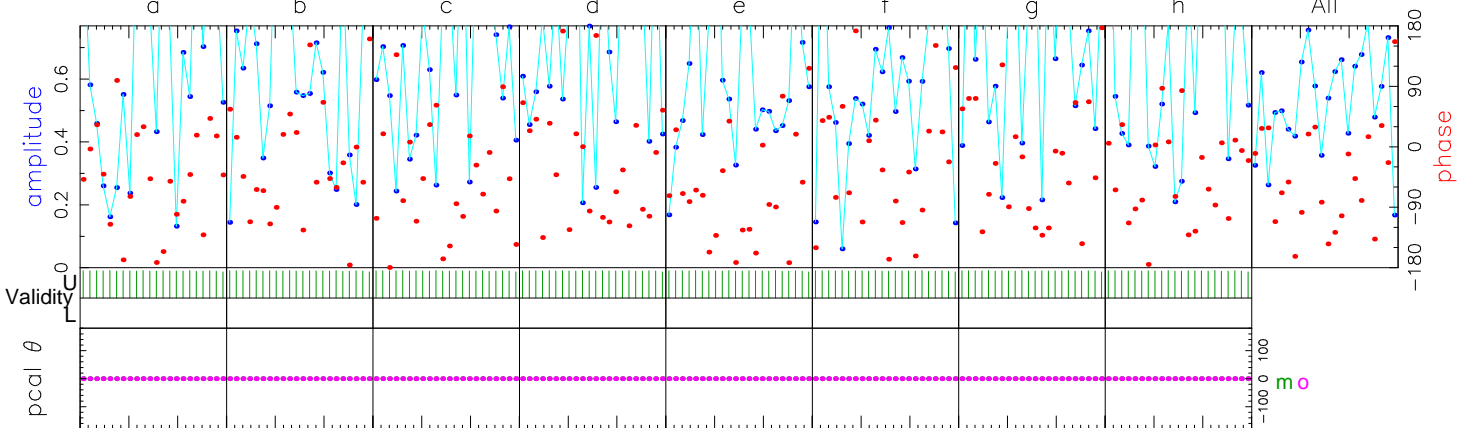


Fringe quality 9  
 SNR 9.3  
 Int time 177.292  
 Amp 0.256  
 Phase -49.8  
 PFD 1.9e-12  
 Delays (us)  
 SBD 0.005570  
 MBD 0.005643  
 Fringe rate (Hz) 0.010699  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132532  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



Avgd. Xpower Spectrum (MHz)

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



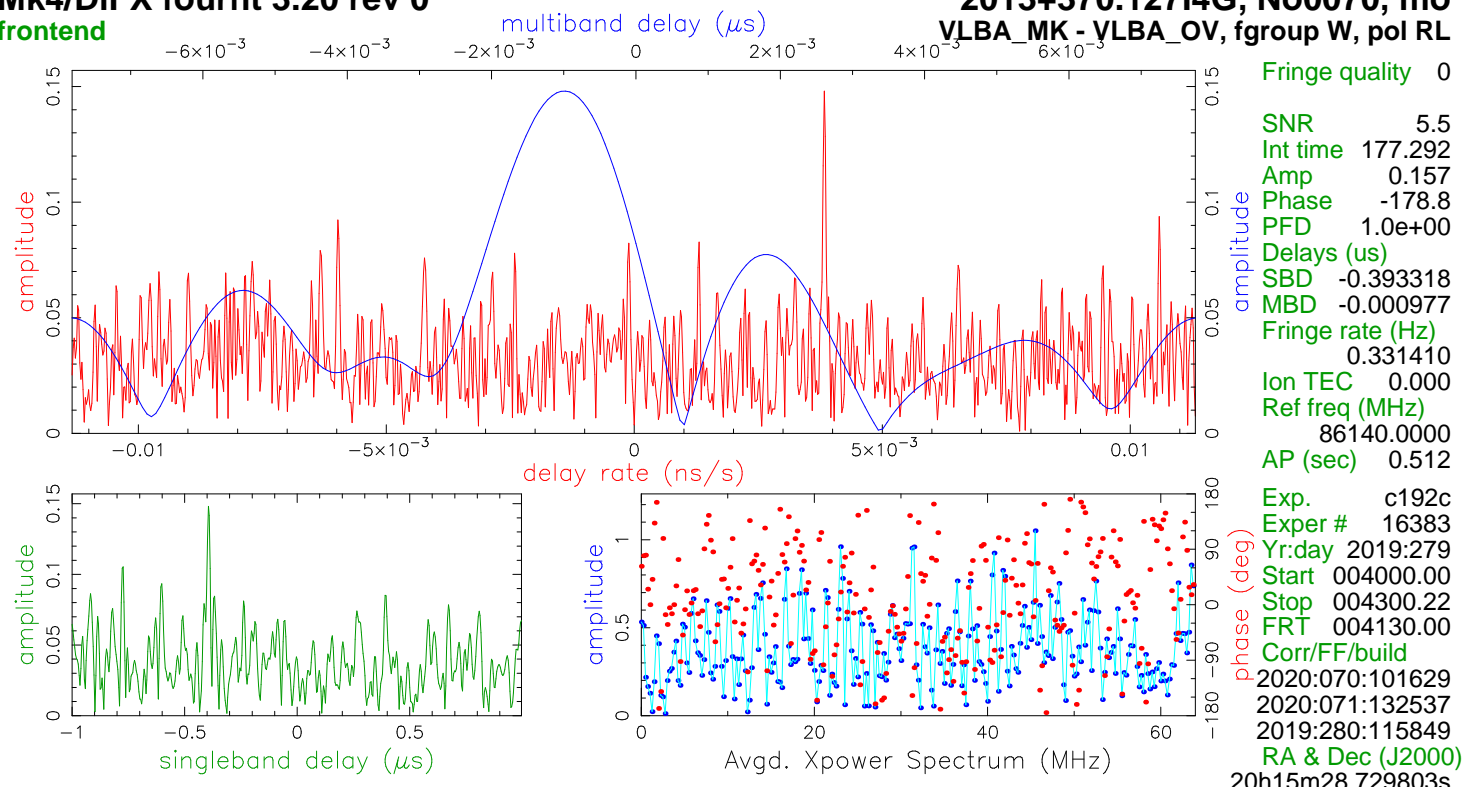
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-22.8	-44.5	-71.9	-50.0	-88.2	-22.1	-52.5	-42.0	Phase	-49.8
	0.3	0.2	0.3	0.3	0.3	0.1	0.2	0.4	Ampl.	0.3
	258.5	356.9	258.3	258.2	258.5	24.1	454.2	259.0	Sbd box	258.4
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
m	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
m:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
m:o	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	
o	1000	1000	1000	1000	1000	1000	1000	1000		
m	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-9.93259172603E+03		Apriori delay (usec)		-9.93259736896E+03		Resid mbdelay (usec)		5.64292E-03	+/- 1.2E-04
Sband delay (usec)	-9.93259179871E+03		Apriori clock (usec)		-1.4071626E+01		Resid sbdelay (usec)		5.57025E-03	+/- 9.2E-04
Phase delay (usec)	-9.93259737056E+03		Apriori clockrate (us/s)		-9.6732924E-09		Resid phdelay (usec)		-1.60603E-06	+/- 4.0E-07
Delay rate (us/s)	5.21800207407E-01		Apriori rate (us/s)		5.21800083200E-01		Resid rate (us/s)		1.24207E-07	+/- 3.8E-09
Total phase (deg)			Apriori accel (us/s/s)		3.45940793611E-05		Resid phase (deg)		-49.8	+/- 12.3

ph/seg (deg) 69.8 28.8 Search (1024X32) 0.241 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 124.1 50.2 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 24.3 17.4 Inc. seg. avg. 0.473 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 30.6 30.3 Inc. frq. avg. 0.257 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 m: az 57.0 el 23.4 pa -82.2 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) -3731.611 213.866 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/mo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/mo.W.271.12714G

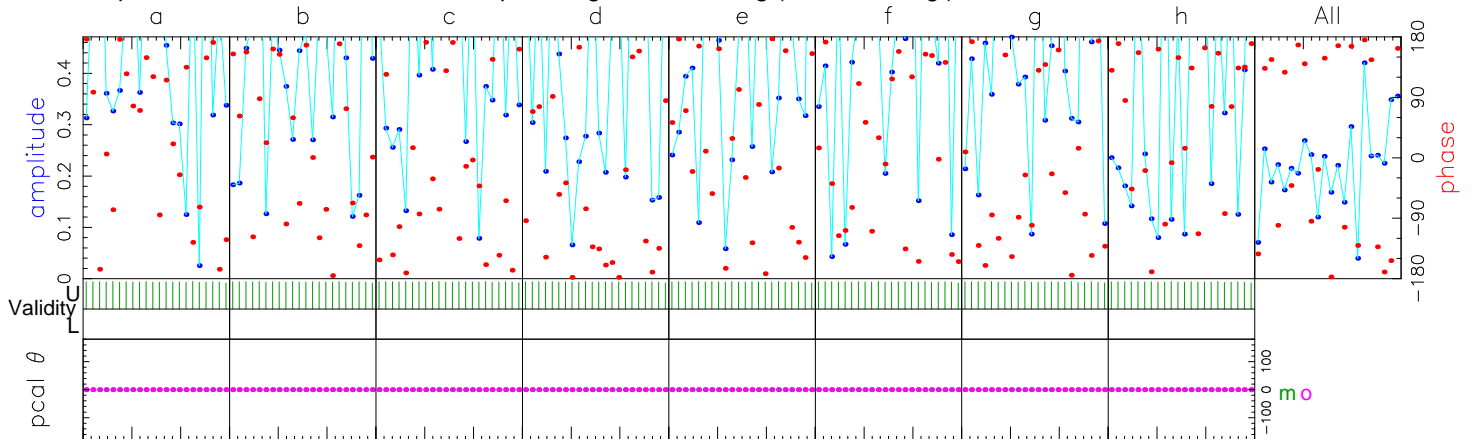


Mk4/DiFX fourfit 3.20 rev 0  
 frontend

2013+370.12714G, No0070, mo  
 VLBA\_MK - VLBA\_OV, fgroup W, pol RL



Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec

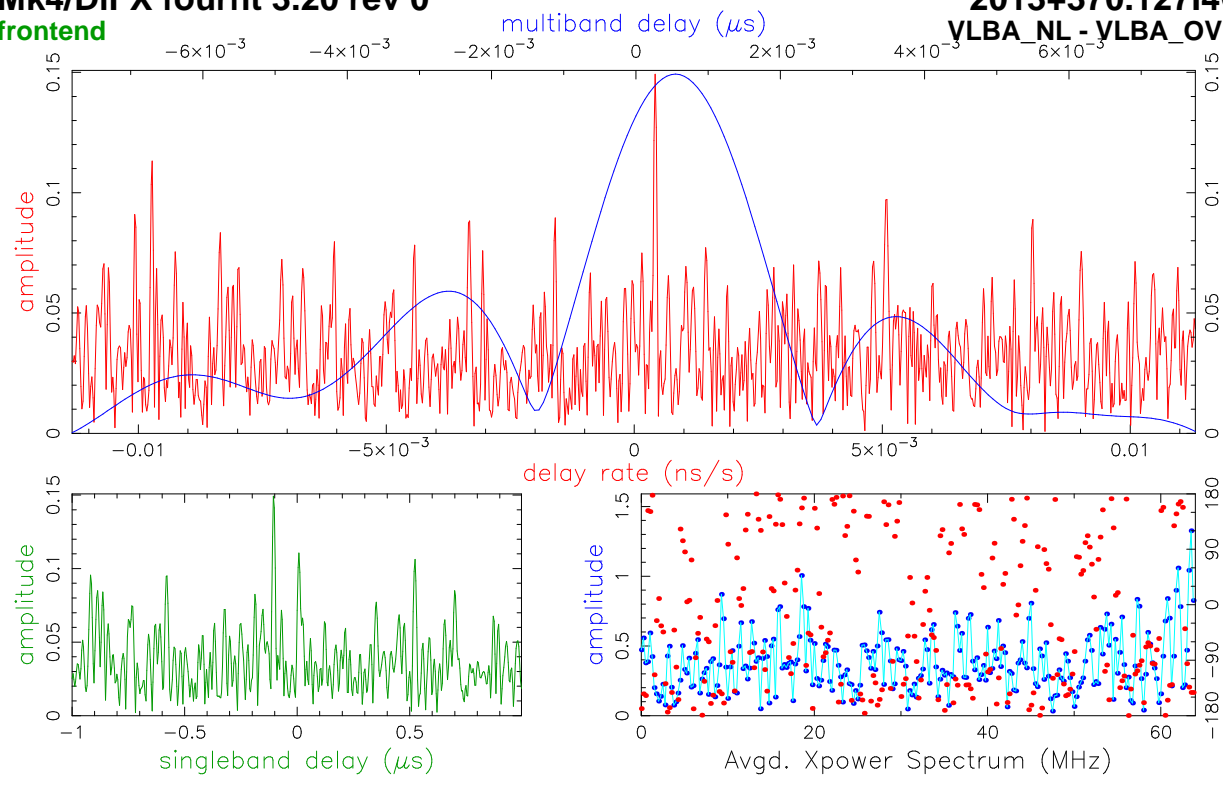


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	155.3	-158.3	-145.8	-172.2	172.4	155.3	-160.0	164.0	Phase	-178.8
	0.2	0.1	0.2	0.2	0.0	0.2	0.2	0.2	Ampl.	0.1
	98.3	498.4	251.3	31.1	151.8	204.8	148.1	362.2	Sbd box	156.3
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
m	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
m:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
m:o	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	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
m	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-9.93298897069E+03		Apriori delay (usec)	-9.93259736896E+03	Resid mbdelay (usec)	-9.76736E-04	+/-	2.0E-04		
Sband delay (usec)	-9.93299068671E+03		Apriori clock (usec)	-1.4071626E+01	Resid sbdelay (usec)	-3.93318E-01	+/-	1.6E-03		
Phase delay (usec)	-9.93259737472E+03		Apriori clockrate (us/s)	-9.6732924E-09	Resid phdelay (usec)	-5.76605E-06	+/-	6.8E-07		
Delay rate (us/s)	5.21803930545E-01		Apriori rate (us/s)	5.21800083200E-01	Resid rate (us/s)	3.84734E-06	+/-	6.5E-09		
Total phase (deg)		-309.1	Apriori accel (us/s/s)	3.45940793611E-05	Resid phase (deg)	-178.8	+/-	21.0		

ph/seg (deg) 61.1 49.3 Search (1024X32) 0.146 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 75.1 86.1 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 24.5 29.7 Inc. seg. avg. 0.170 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 38.4 51.9 Inc. frq. avg. 0.148 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 m: az 57.0 el 23.4 pa -82.2 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) -3731.611 213.866 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/mo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/mo.W.311.12714G

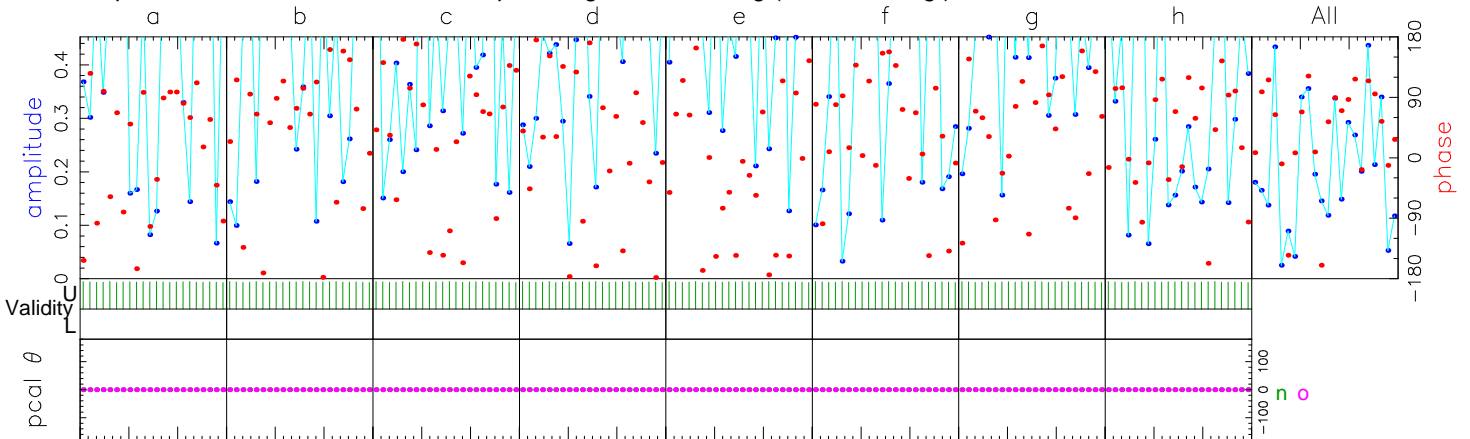
Mk4/DiFX fourfit 3.20 rev 0  
frontend

2013+370.12714G, No0070, no  
VLBA\_NL - VLBA\_OV, fgroup W, pol LL



Fringe quality 0  
SNR 5.5  
Int time 177.251  
Amp 0.151  
Phase 78.6  
PFD 9.9e-01  
Delays (us)  
SBD -0.104363  
MBD 0.000572  
Fringe rate (Hz) 0.036538  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 004000.00  
Stop 004300.22  
FRT 004130.00  
Corr/FF/build  
2020:070:101629  
2020:071:132530  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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
	72.3	91.6	80.2	44.0	91.8	78.4	83.4	67.5	Phase	78.6
	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.1	Ampl.	0.1
	346.7	481.7	167.3	213.3	92.5	178.7	110.3	173.8	Sbd box	230.3
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
n:o	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	
o	1000	1000	1000	1000	1000	1000	1000	1000		
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	2.51306291386E+03		Apriori delay (usec)		2.51317171673E+03		Resid mbdelay (usec)		5.72131E-04	+/- 2.0E-04
Sband delay (usec)	2.51306735423E+03		Apriori clock (usec)		9.8695240E+00		Resid sbdelay (usec)		-1.04363E-01	+/- 1.6E-03
Phase delay (usec)	2.51317171927E+03		Apriori clockrate (us/s)		1.3324251E-07		Resid phdelay (usec)		2.53532E-06	+/- 6.7E-07
Delay rate (us/s)	-4.26482258564E-01		Apriori rate (us/s)		-4.26482682735E-01		Resid rate (us/s)		4.24171E-07	+/- 6.5E-09
Total phase (deg)	323.2		Apriori accel (us/s/s)		-9.14325053283E-06		Resid phase (deg)		78.6	+/- 20.9

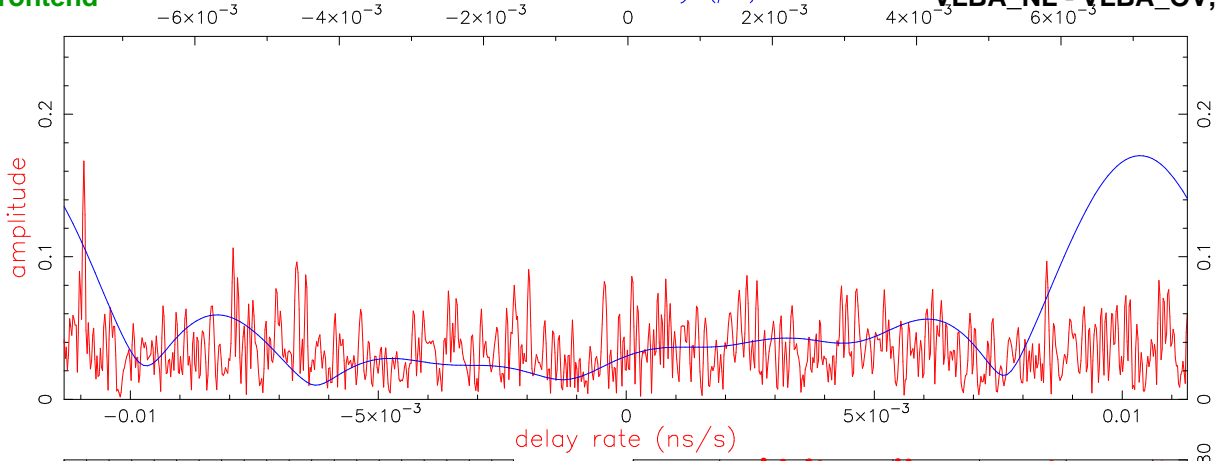
ph/seg (deg) 62.0 49.0 Search (1024X32) 0.147 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 89.1 85.5 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 17.0 29.5 Inc. seg. avg. 0.155 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 32.4 51.5 Inc. frq. avg. 0.135 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 113.9 el 80.2 pa -58.0 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 3062.313 -133.676 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/no..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/no.W.258.12714G

Mk4/DiFX fourfit 3.20 rev 0  
 frontend

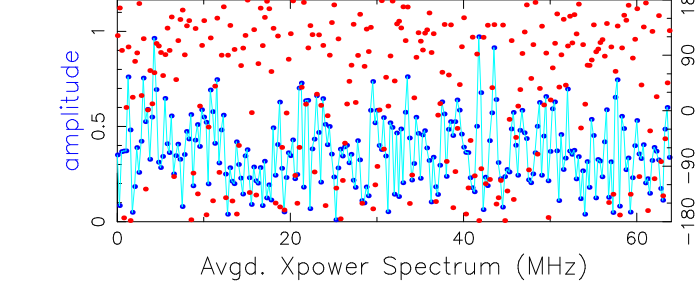
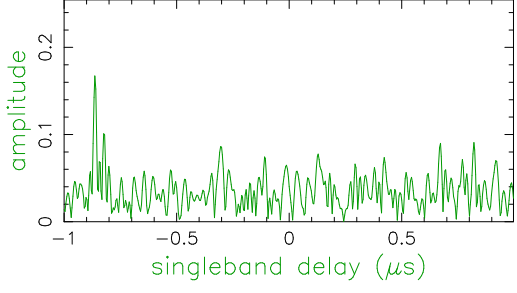
2013+370.12714G, No0070, no  
 VLBA\_NL - VLBA\_OV, fgroup W, pol RR

multiband delay ( $\mu$ s)

Fringe quality 0

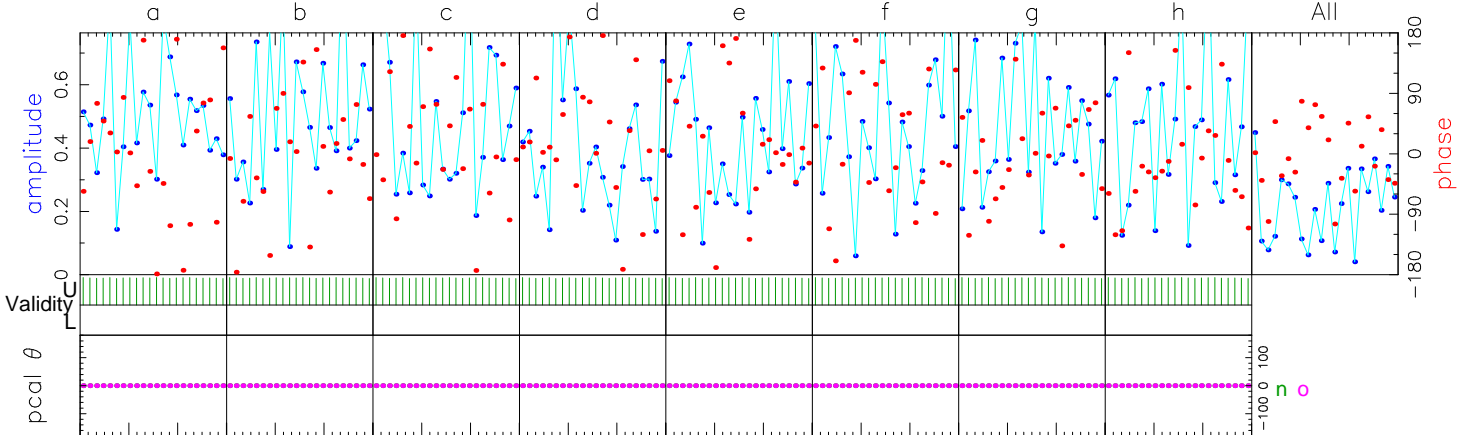


SNR 6.1  
 Int time 177.252  
 Amp 0.255  
 Phase 1.5  
 PFD 1.3e-01  
 Delays (us)  
 SBD -0.862774  
 MBD -0.008301  
 Fringe rate (Hz)  
 -0.943719  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132533  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
n	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
n:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
n:0	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		
o	1000	1000	1000	1000	1000	1000	1000	1000		
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		

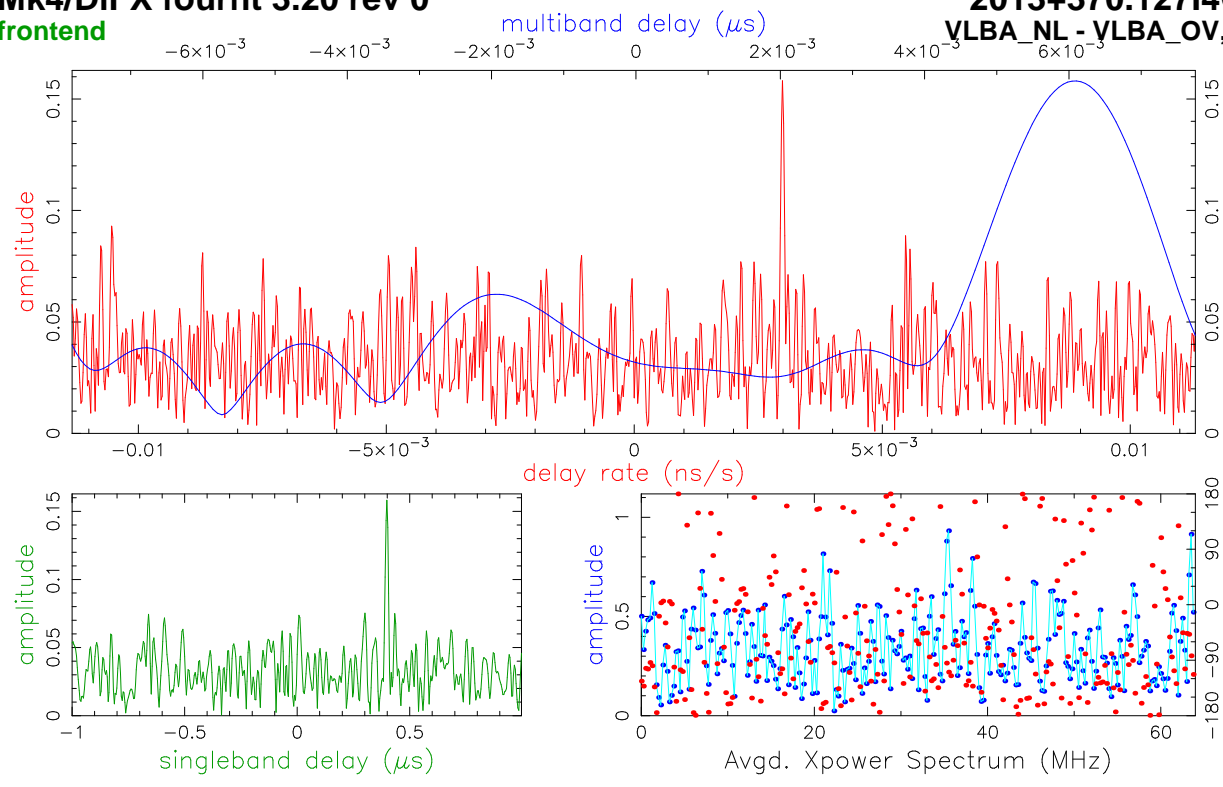
Group delay (usec)(sbd) 2.51230404095E+03 Apriori delay (usec) 2.51317171673E+03 Resid mbdelay (usec) -8.30078E-03 +/- 1.8E-04  
 Sband delay (usec) 2.51230894298E+03 Apriori clock (usec) 9.8695240E+00 Resid sbdelay (usec) -8.62774E-01 +/- 1.4E-03  
 Phase delay (usec) 2.51317171678E+03 Apriori clockrate (us/s) 1.3324251E-07 Resid phdelay (usec) 4.93011E-08 +/- 6.1E-07  
 Delay rate (us/s) -4.26493638374E-01 Apriori rate (us/s) -4.26482682735E-01 Resid rate (us/s) -1.09556E-05 +/- 5.8E-09  
 Total phase (deg) 246.1 Apriori accel (us/s/s) -9.14325053283E-06 Resid phase (deg) 1.5 +/- 18.8

ph/seg (deg) 51.4 44.1 Amplitude 0.255 +/- 0.042 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 73.8 76.9 Search (1024X32) 0.164 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 21.2 26.6 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 35.5 46.4 Inc. seg. avg. 0.256 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 Inc. frq. avg. 0.242 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00

n: az 113.9 el 80.2 pa -58.0 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 3062.313 -133.676 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/no..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/no.W.281.12714G

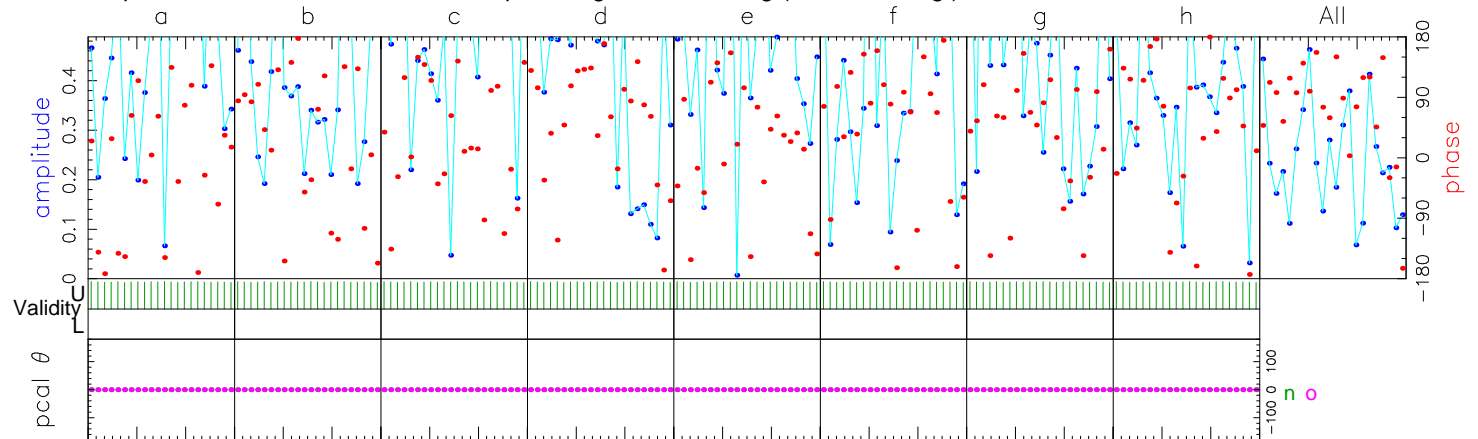
Mk4/DiFX fourfit 3.20 rev 0  
frontend

2013+370.12714G, No0070, no  
VLBA\_NL - VLBA\_OV, fgroup W, pol LR



Fringe quality 0  
SNR 5.8  
Int time 177.251  
Amp 0.163  
Phase 90.0  
PFD 6.5e-01  
Delays (us)  
SBD 0.398189  
MBD 0.006079  
Fringe rate (Hz) 0.257441  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 004000.00  
Stop 004300.22  
FRT 004130.00  
Corr/FF/build  
2020:070:101629  
2020:071:132536  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

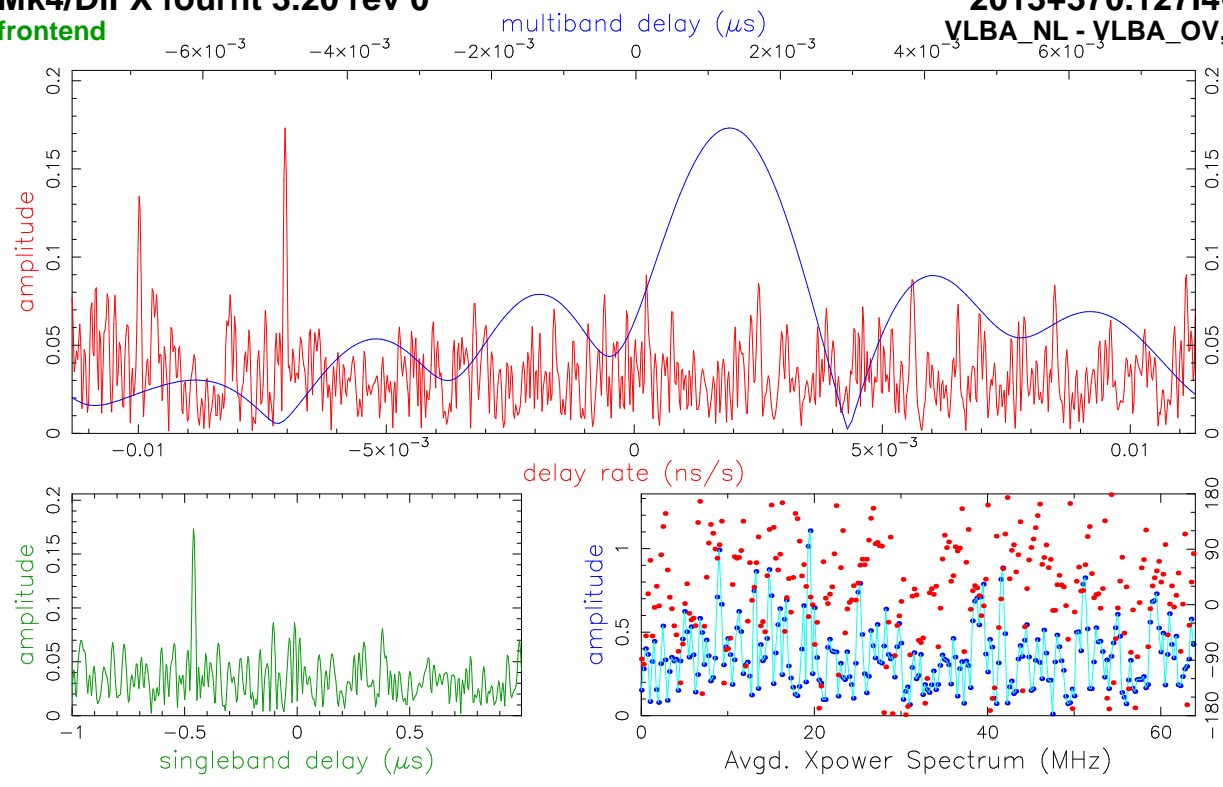
Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All		
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0				
n	1000	1000	1000	1000	1000	1000	1000	1000	APs used			
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs			
n:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase			
n:o	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			
o	1000	1000	1000	1000	1000	1000	1000	1000				
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids			
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks			
									Chan ids			
									Tracks			
Group delay (usec)(sbd)	2.51356842037E+03		Apriori delay (usec)		2.51317171673E+03		Resid mbdelay (usec)		6.07864E-03	+/- 1.9E-04		
Sband delay (usec)	2.51356990548E+03		Apriori clock (usec)		9.8695240E+00		Resid sbdelay (usec)		3.98189E-01	+/- 1.5E-03		
Phase delay (usec)	2.51317171963E+03		Apriori clockrate (us/s)		1.3324251E-07		Resid phdelay (usec)		2.90205E-06	+/- 6.4E-07		
Delay rate (us/s)	-4.26479694096E-01		Apriori rate (us/s)		-4.26482682735E-01		Resid rate (us/s)		2.98864E-06	+/- 6.2E-09		
Total phase (deg)			Apriori accel (us/s/s)		-9.14325053283E-06		Resid phase (deg)		90.0	+/- 19.9		
	RMS	Theor.	Amplitude	0.163 +/- 0.028		Pcal mode: MANUAL, MANUAL		PC period (AP's) 5, 5				
ph/seg (deg)	55.2	46.6	Search (1024X32)	0.157		Pcal rate: 0.000E+00, 0.000E+00 (us/s)		sb window (us)	-1.000	1.000		
amp/seg (%)	87.8	81.4	Interp.	0.000		Bits/sample: 2x2		SampCntNorm: enabled	mb window (us)	-0.008	0.008	
ph/frq (deg)	29.6	28.1	Inc. seg. avg.	0.186		Sample rate(MISamp/s): 128		dr window (ns/s)	-0.011	0.011		
amp/frq (%)	37.6	49.1	Inc. frq. avg.	0.158		Data rate(Mb/s): 2048		nlags: 256	t_cohere infinite	ion window (TEC)	0.00	0.00
n: az 113.9 el 80.2 pa -58.0	o: az 78.2 el 60.0 pa -78.1		u, v (fr/asec) 3062.313 -133.676						simultaneous interpolator			
Control file: cf_1234_gmva		Input file: /Exps/c192c/v1_CygA2/1234/No0070/no..12714G		Output file: /Exps/c192c/v1_CygA2/1234/No0070/no.W.302.12714G								

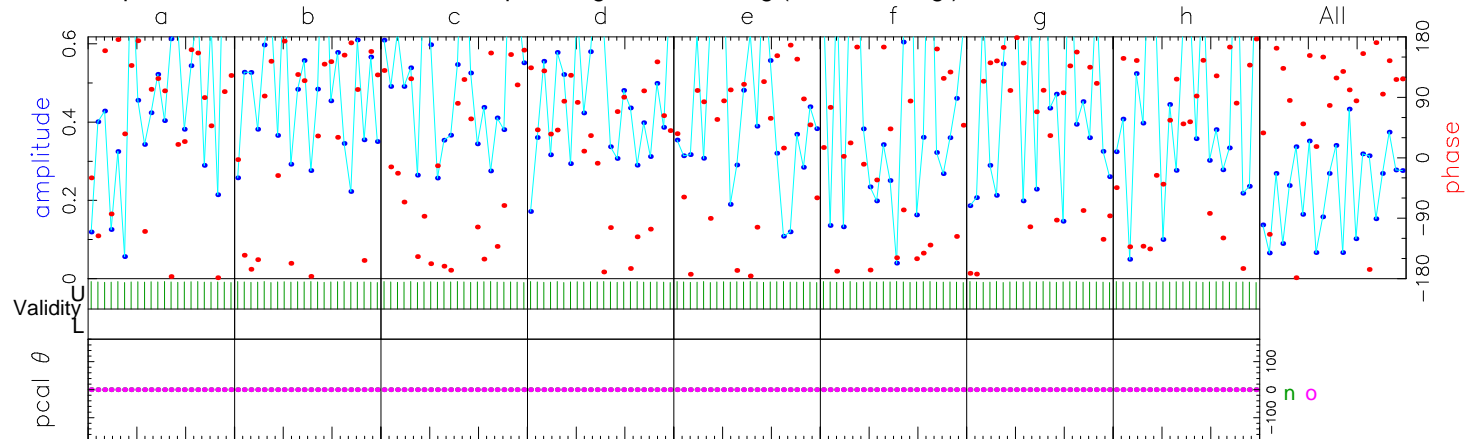
Mk4/DiFX fourfit 3.20 rev 0  
frontend

2013+370.12714G, No0070, no  
VLBA\_NL - VLBA\_OV, fgroup W, pol RL



Fringe quality 0  
SNR 6.4  
Int time 177.252  
Amp 0.206  
Phase 128.5  
PFD 2.8e-02  
Delays (us)  
SBD -0.459815  
MBD 0.001315  
Fringe rate (Hz)  
-0.607869  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 004000.00  
Stop 004300.22  
FRT 004130.00  
Corr/FF/build  
2020:070:101629  
2020:071:132538  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec

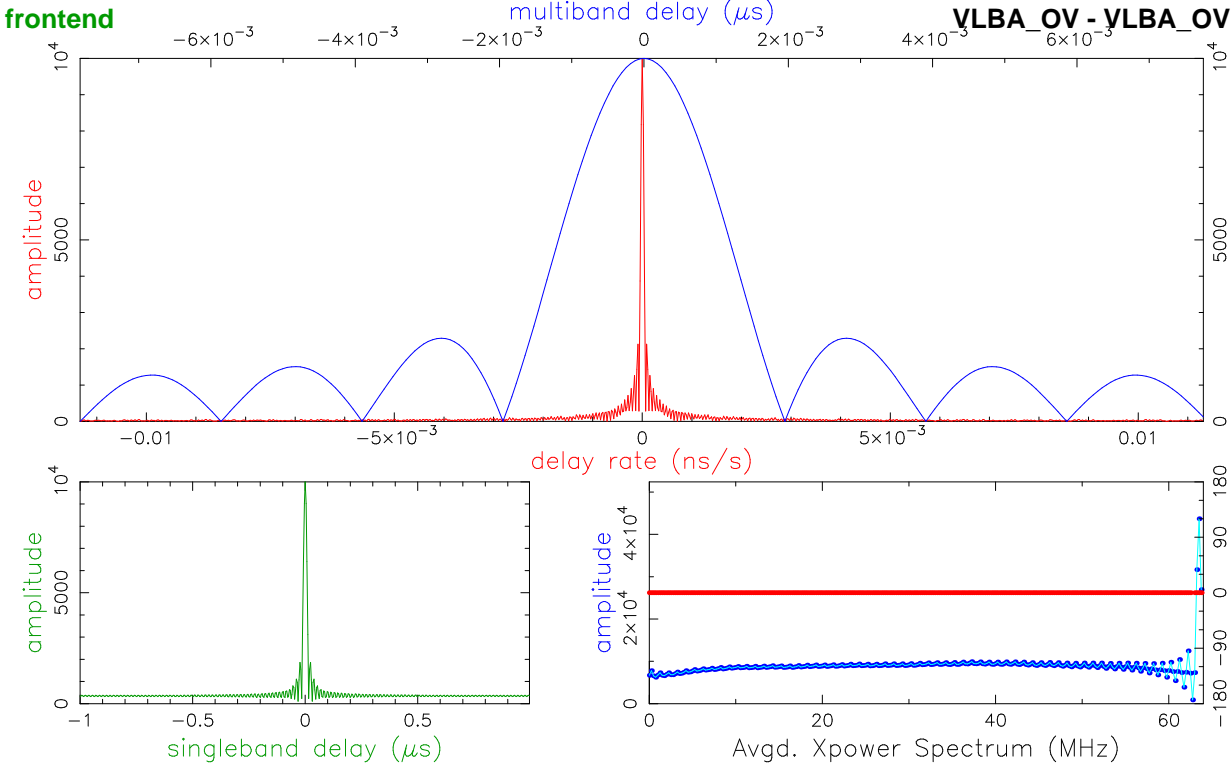


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	127.9	143.4	165.4	74.3	101.1	150.4	141.9	130.8		128.5
n	0.3	0.3	0.2	0.2	0.2	0.1	0.3	0.2		0.2
o	359.7	139.7	252.9	247.7	455.3	487.9	194.2	280.1		139.3
n	1000	1000	1000	1000	1000	1000	1000	1000		1000
o	1000	1000	1000	1000	1000	1000	1000	1000		1000
n:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		0:0
o:0	0:0	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		1000
o	1000	1000	1000	1000	1000	1000	1000	1000		1000
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		Chan ids
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		Tracks
Group delay (usec)(sbd)	2.51270428161E+03		Apriori delay (usec)		2.51317171673E+03		Resid mbdelay (usec)		1.31488E-03	+/- 1.7E-04
Sband delay (usec)	2.51271190173E+03		Apriori clock (usec)		9.8695240E-07		Resid sbdelay (usec)		-4.59815E-01	+/- 1.4E-03
Phase delay (usec)	2.51317172088E+03		Apriori clockrate (us/s)		1.3324251E-07		Resid phdelay (usec)		4.14387E-06	+/- 5.8E-07
Delay rate (us/s)	-4.26489739487E-01		Apriori rate (us/s)		-4.26482682735E-01		Resid rate (us/s)		-7.05675E-06	+/- 5.6E-09
Total phase (deg)	13.1		Apriori accel (us/s/s)		-9.14325053283E-06		Resid phase (deg)		128.5	+/- 18.0
ph/seg (deg)	RMS	Theor.	Amplitude		0.206 +/- 0.032		Pcal mode: MANUAL, MANUAL		PC period (AP's) 5, 5	
amp/seg (%)	52.9	42.3	Search (1024X32)		0.169		Pcal rate: 0.000E+00, 0.000E+00 (us/s)		sb window (us)	-1.000 1.000
ph/frq (deg)	70.4	73.8	Interp.		0.000		Bits/sample: 2x2		mb window (us)	-0.008 0.008
amp/frq (%)	31.4	25.5	Inc. seg. avg.		0.214		Sample rate(MISamp/s): 128		dr window (ns/s)	-0.011 0.011
	41.4	44.5	Inc. frq. avg.		0.206		Data rate(Mb/s): 2048		ion window (TEC)	0.00 0.00
n: az 113.9 el 80.2 pa -58.0	o: az 78.2 el 60.0 pa -78.1		u, v (fr/asec)		3062.313 -133.676				simultaneous interpolator	
Control file: cf_1234_gmva	Input file: /Exps/c192c/v1_CygA2/1234/No0070/no..12714G		Output file: /Exps/c192c/v1_CygA2/1234/No0070/no.W.318.12714G							



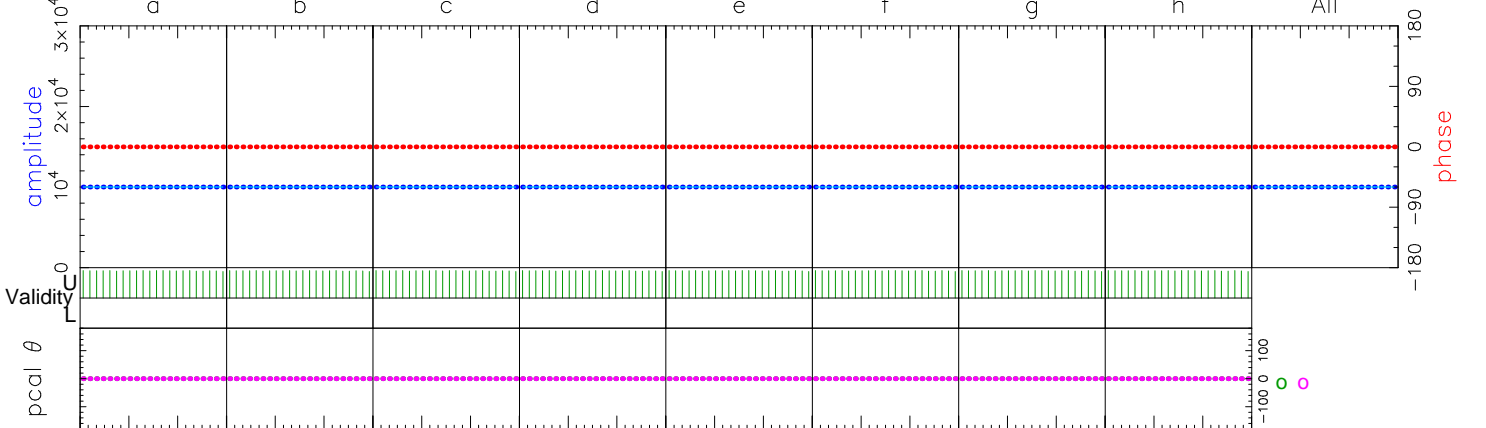
Mk4/DiFX fourfit 3.20 rev 0  
 frontend

2013+370.12714G, No0070, oo  
 VLBA\_OV - VLBA\_OV, fgroup W, pol LL



Fringe quality 9  
 SNR 365239.9  
 Int time 178.386  
 Amp 10000.002  
 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 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132539  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
o	1000	1000	1000	1000	1000	1000	1000	1000		
o:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
o:o	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		
o	1000	1000	1000	1000	1000	1000	1000	1000		
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.00000E+00	+/- 3.0E-09
Sband delay (usec)	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.00000E+00	+/- 2.4E-08
Phase delay (usec)	3.13687298298E-20	3.13687298298E-20	3.13687298298E-20	3.13687298298E-20	3.13687298298E-20	3.13687298298E-20	3.13687298298E-20	3.13687298298E-20	3.13687E-20	+/- 1.0E-11
Delay rate (us/s)	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.00000E+00	+/- 9.7E-14
Total phase (deg)			0.0						0.0	+/- 0.0

ph/seg (deg) 0.0 0.0  
 amp/seg (%) 0.0 0.0  
 ph/frq (deg) 0.0 0.0  
 amp/frq (%) 0.0 0.0  
 o: az 78.2 el 60.0 pa -78.1  
 Control file: cf\_1234\_gmva

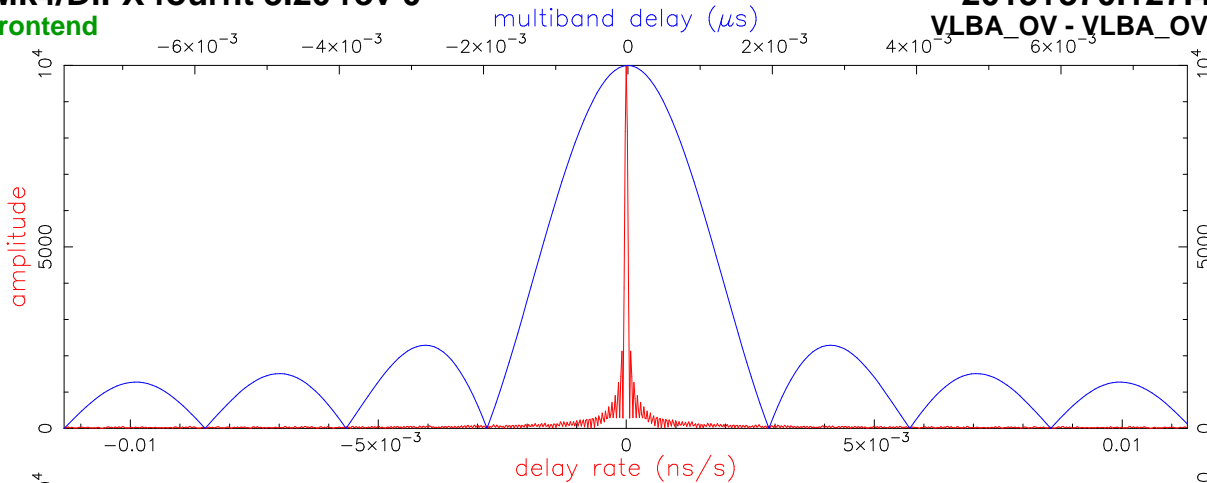
Amplitude 10000.002 +/- 0.027  
 Search (1024X32) 10000.002  
 Interp. 0.000  
 Inc. seg. avg. 10000.000  
 Inc. frq. avg. 10000.002  
 o: az 78.2 el 60.0 pa -78.1  
 Input file: /Exps/c192c/v1\_CygA2/1234/No0070/oo..12714G

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  
 u,v (fr/asec) 0.000 0.000  
 PC period (AP's) 5, 5  
 sb window (us) -1.000 1.000  
 SampCntNorm: enabled  
 mb window (us) -0.008 0.008  
 dr window (ns/s) -0.011 0.011  
 nlags: 256 t\_cohere infinite  
 ion window (TEC) 0.00 0.00  
 simultaneous interpolator

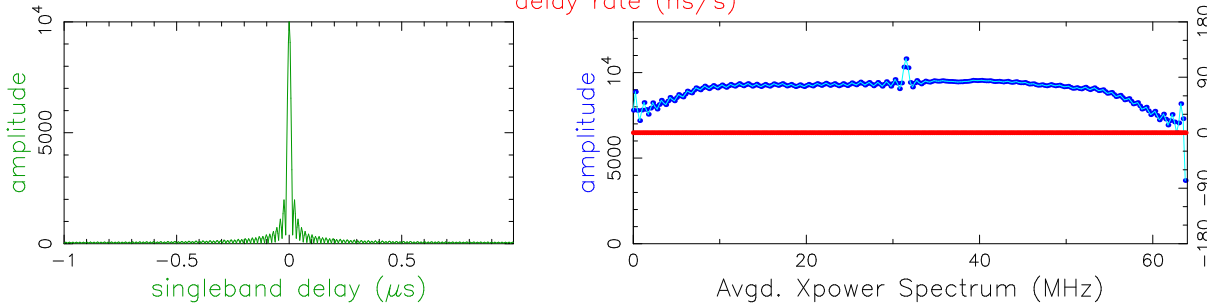
Output file: /Exps/c192c/v1\_CygA2/1234/No0070/oo.W.320.12714G

Mk4/DiFX fourfit 3.20 rev 0  
 frontend

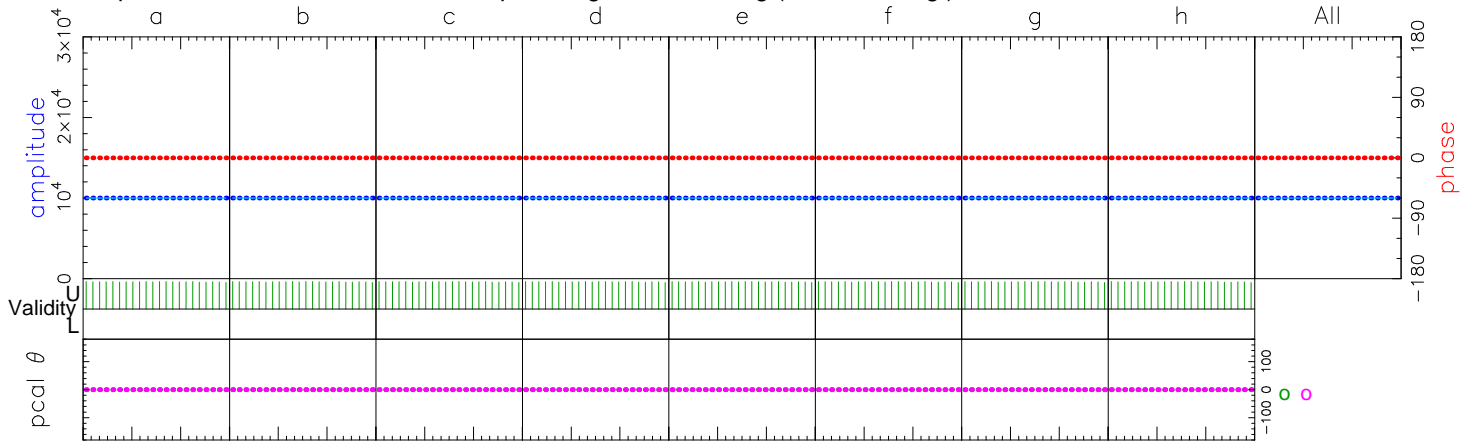
2013+370.12714G, No0070, oo  
 VLBA\_OV - VLBA\_OV, fgroup W, pol RR



Fringe quality 9  
 SNR 365239.9  
 Int time 178.386  
 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  
 Yr:day 16383  
 Start 2019:279  
 Stop 2019:279  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132541  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



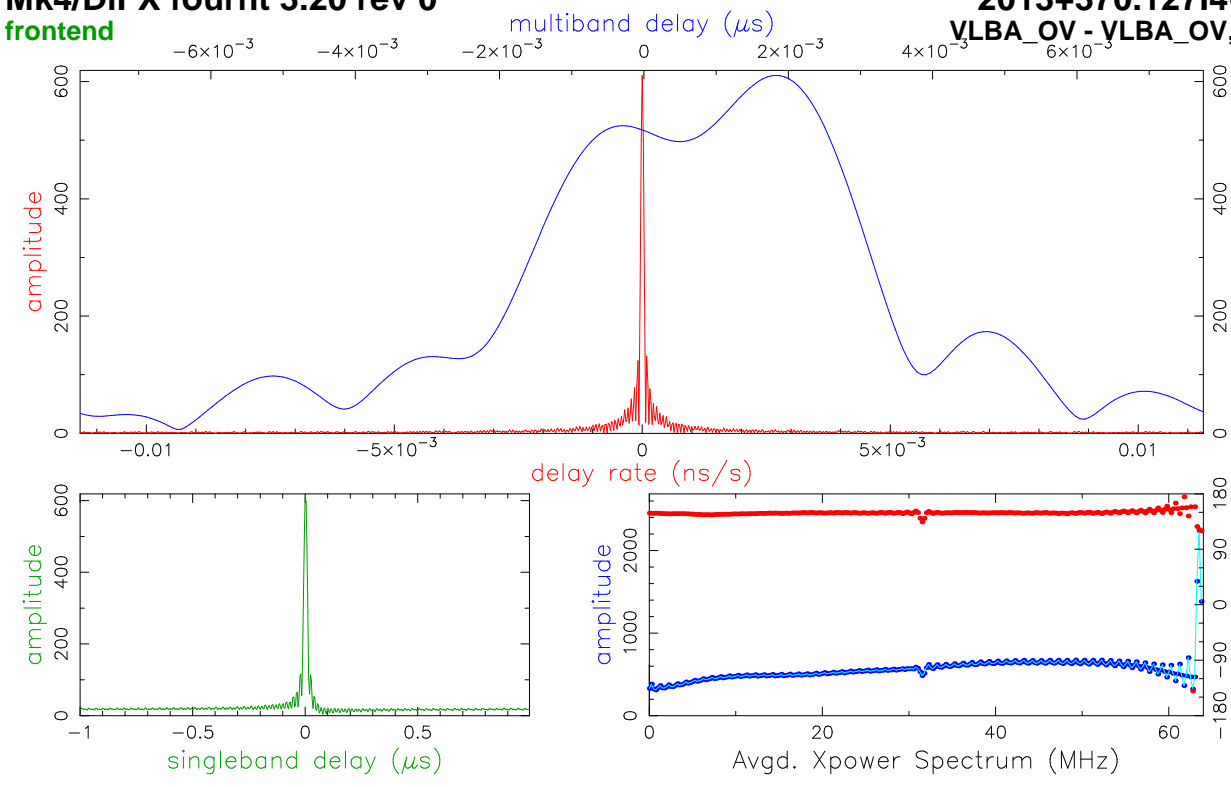
Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	Ampl.	10000.0
o	1000	1000	1000	1000	1000	1000	1000	1000	Sbd box	257.0
o	1000	1000	1000	1000	1000	1000	1000	1000	APs used	
o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC freqs	
o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
o	1000	1000	1000	1000	1000	1000	1000	1000	Mani PC	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00		+/- 3.0E-09
Sband delay (usec)	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00		+/- 2.4E-08
Phase delay (usec)	-5.52129118592E-20	-5.52129118592E-20	-5.52129118592E-20	-5.52129118592E-20	-5.52129118592E-20	-5.52129118592E-20	-5.52129118592E-20	-5.52129118592E-20		+/- 1.0E-11
Delay rate (us/s)	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00	0.0000000000E+00		+/- 9.7E-14
Total phase (deg)			-0.0							+/- 0.0
	RMS	Theor.	Amplitude	10000.001 +/- 0.027	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.	10000.002	Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00	0.00
o: az 78.2 el 60.0 pa -78.1      o: az 78.2 el 60.0 pa -78.1      u,v (fr/asec) 0.000 0.000      simultaneous interpolator										
Control file: cf_1234_gmva    Input file: /Exps/c192c/v1_CygA2/1234/No0070/oo..12714G    Output file: /Exps/c192c/v1_CygA2/1234/No0070/oo.W.332.12714G										

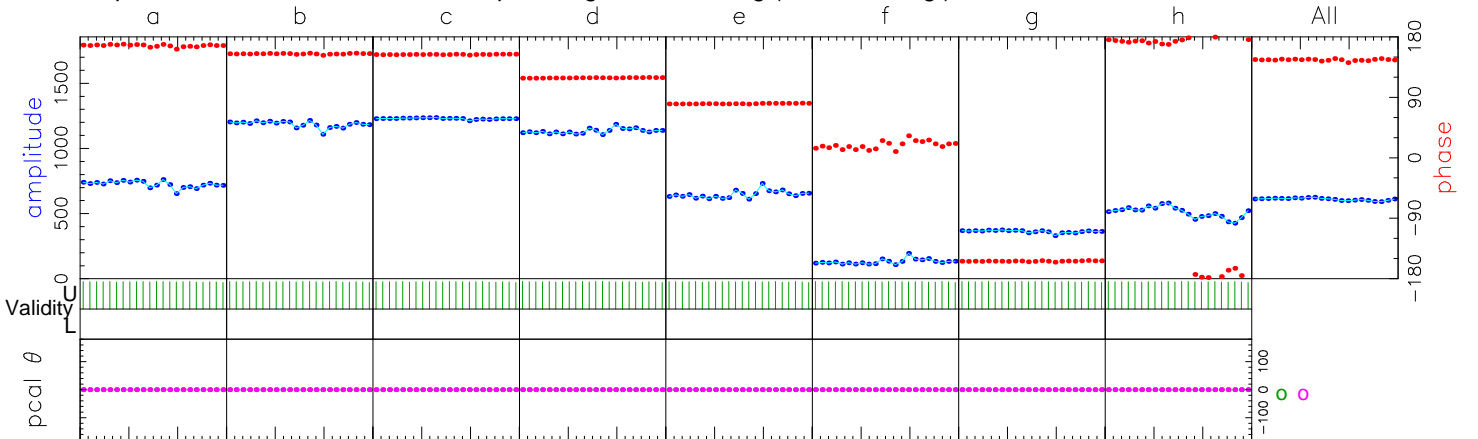
Mk4/DiFX fourfit 3.20 rev 0  
frontend

2013+370.12714G, No0070, oo  
VLBA\_OV - VLBA\_OV, fgroup W, pol LR



Fringe quality 5  
SNR 22609.2  
Int time 178.386  
Amp 619.022  
Phase 145.7  
PFD 0.0e+00  
Delays (us)  
SBD 0.001483  
MBD 0.001850  
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 004000.00  
Stop 004300.22  
FRT 004130.00  
Corr/FF/build  
2020:070:101629  
2020:071:132544  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
o	1000	1000	1000	1000	1000	1000	1000	1000		
o	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		
o	1000	1000	1000	1000	1000	1000	1000	1000		
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		

Group delay (usec)(sbd) 1.84996875000E-03 Apriori delay (usec) 0.00000000000E+00 Resid mbdelay (usec) 1.84997E-03 +/- 4.8E-08  
 Sband delay (usec) 1.48325000000E-03 Apriori clock (usec) 0.0000000E+00 Resid sbdelay (usec) 1.48325E-03 +/- 3.8E-07  
 Phase delay (usec) 4.69773076658E-06 Apriori clockrate (us/s) 0.0000000E+00 Resid phdelay (usec) 4.69773E-06 +/- 1.6E-10  
 Delay rate (us/s) -1.57299791548E-10 Apriori rate (us/s) 0.00000000000E+00 Resid rate (us/s) -1.57300E-10 +/- 1.6E-12  
 Total phase (deg) 145.7 Apriori accel (us/s/s) 0.00000000000E+00 Resid phase (deg) 145.7 +/- 0.0

ph/seg (deg) 1.3 0.0 Theor. Amplitude 619.022 +/- 0.027 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 2.0 0.0 Search (1024X32) 607.837 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 66.0 0.0 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 64.8 0.0 Inc. seg. avg. 610.628 Sample rate(MISamp/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

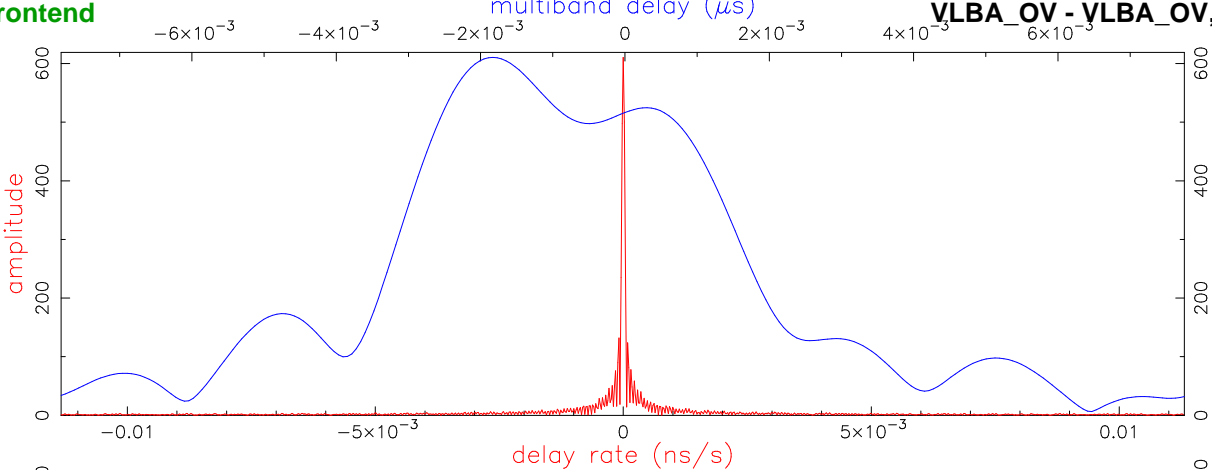
o: az 78.2 el 60.0 pa -78.1 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/oo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/oo.W.352.12714G

Mk4/DiFX fourfit 3.20 rev 0

frontend

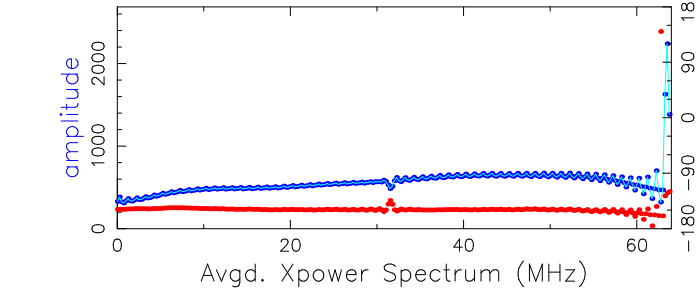
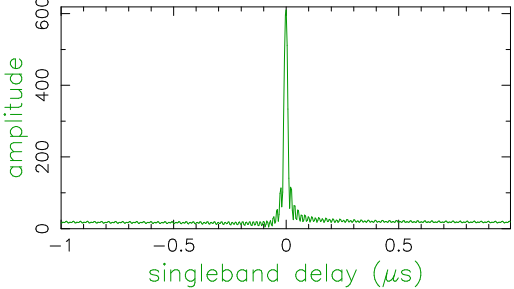
2013+370.12714G, No0070, oo

VLBA\_OV - VLBA\_OV, fgroup W, pol RL



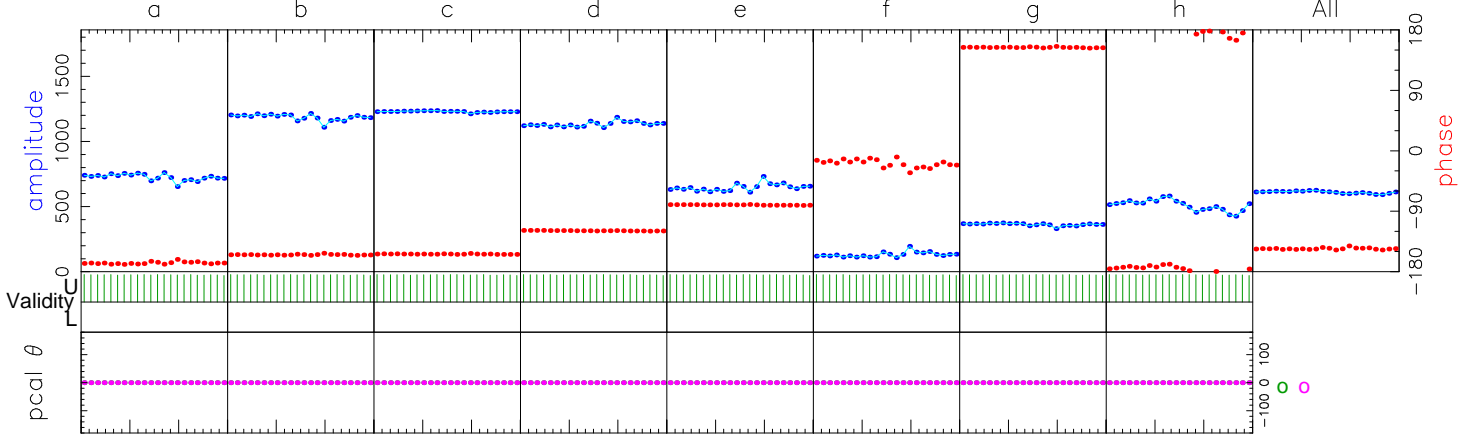
Fringe quality 5

SNR 22609.2  
 Int time 178.386  
 Amp 619.022  
 Phase -145.7  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.001483  
 MBD -0.001850  
 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 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132546  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec

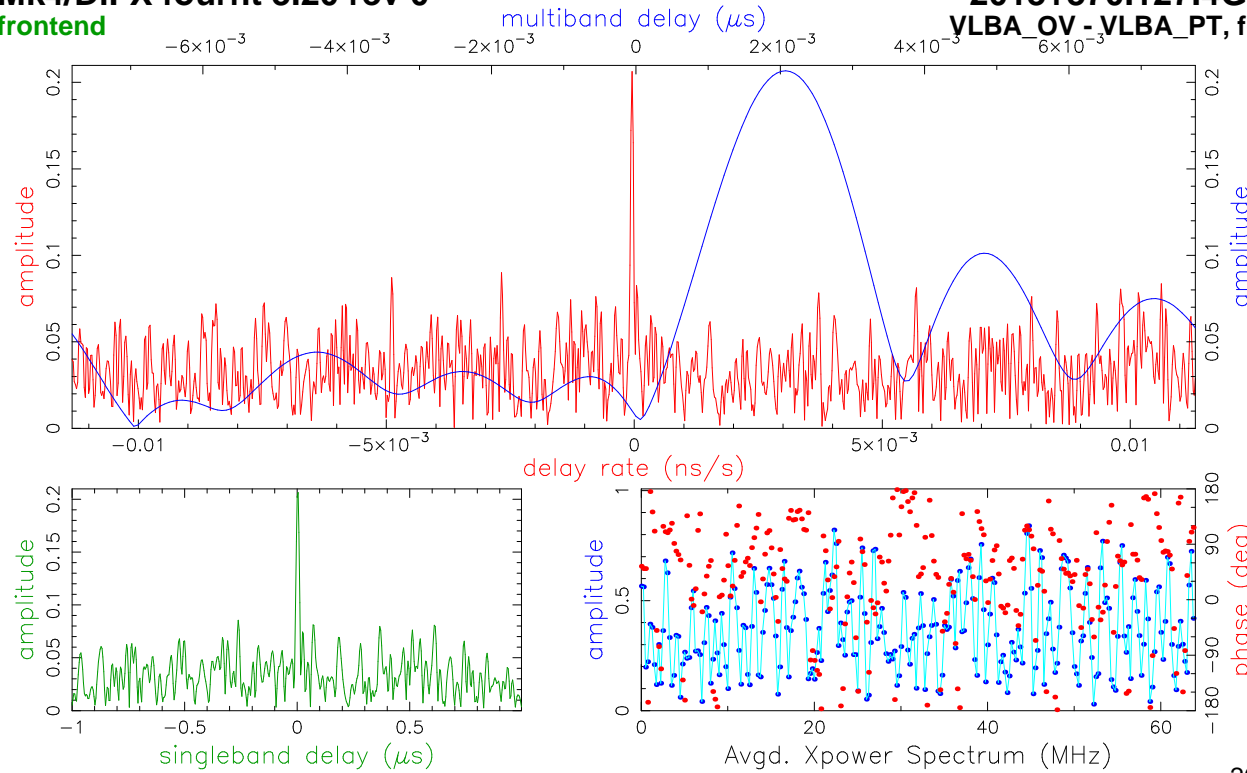


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-166.9	-154.7	-153.7	-119.0	-80.5	-19.5	153.8	-177.3		-145.7
	725.8	1186.2	1229.4	1133.6	647.6	131.0	363.1	507.7		740.5
	256.3	256.9	256.7	257.0	256.8	258.8	256.7	257.7		256.6
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
o	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
o:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
o:0	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		
o	1000	1000	1000	1000	1000	1000	1000	1000		
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	-1.84996875000E-03		Apriori delay (usec)		0.00000000000E+00		Resid mbdelay (usec)		-1.84997E-03	+/- 4.8E-08
Sband delay (usec)	-1.48325000000E-03		Apriori clock (usec)		0.0000000E+00		Resid sbdelay (usec)		-1.48325E-03	+/- 3.8E-07
Phase delay (usec)	-4.69773076668E-06		Apriori clockrate (us/s)		0.0000000E+00		Resid phdelay (usec)		-4.69773E-06	+/- 1.6E-10
Delay rate (us/s)	1.57299791548E-10		Apriori rate (us/s)		0.00000000000E+00		Resid rate (us/s)		1.57300E-10	+/- 1.6E-12
Total phase (deg)			Apriori accel (us/s/s)		0.00000000000E+00		Resid phase (deg)		-145.7	+/- 0.0

ph/seg (deg) 1.3 0.0 Theor. Amplitude 619.022 +/- 0.027 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 2.0 0.0 Search (1024X32) 607.837 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 66.0 0.0 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 64.8 0.0 Inc. seg. avg. 610.628 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 o: az 78.2 el 60.0 pa -78.1 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 0.000 0.000 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/oo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/oo.W.367.12714G simultaneous interpolator

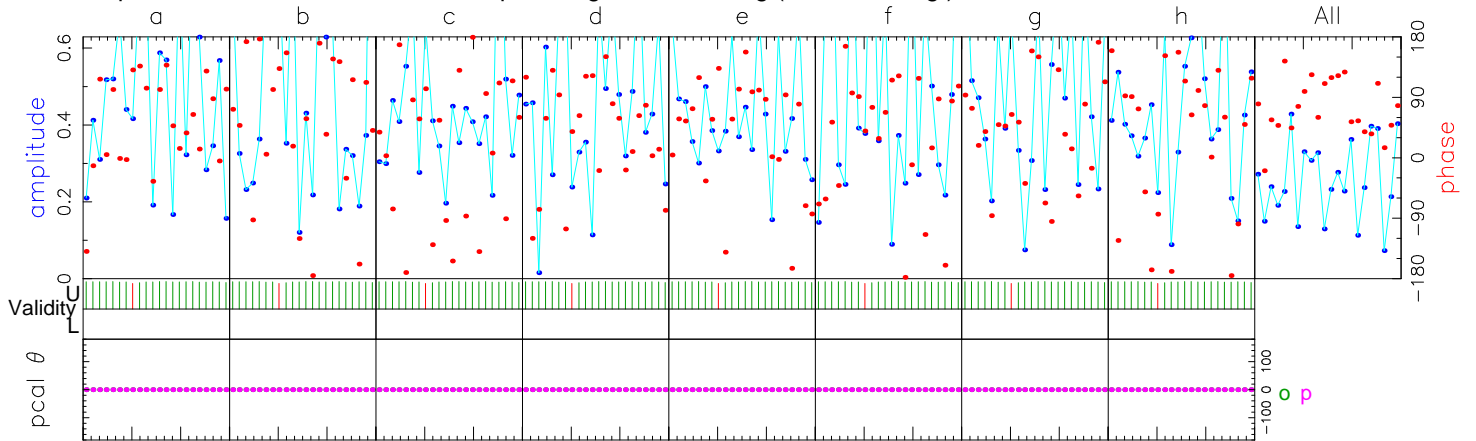
Mk4/DiFX fourfit 3.20 rev 0  
frontend

2013+370.12714G, No0070, op  
VLBA\_OV - VLBA\_PT, fgroup W, pol LL



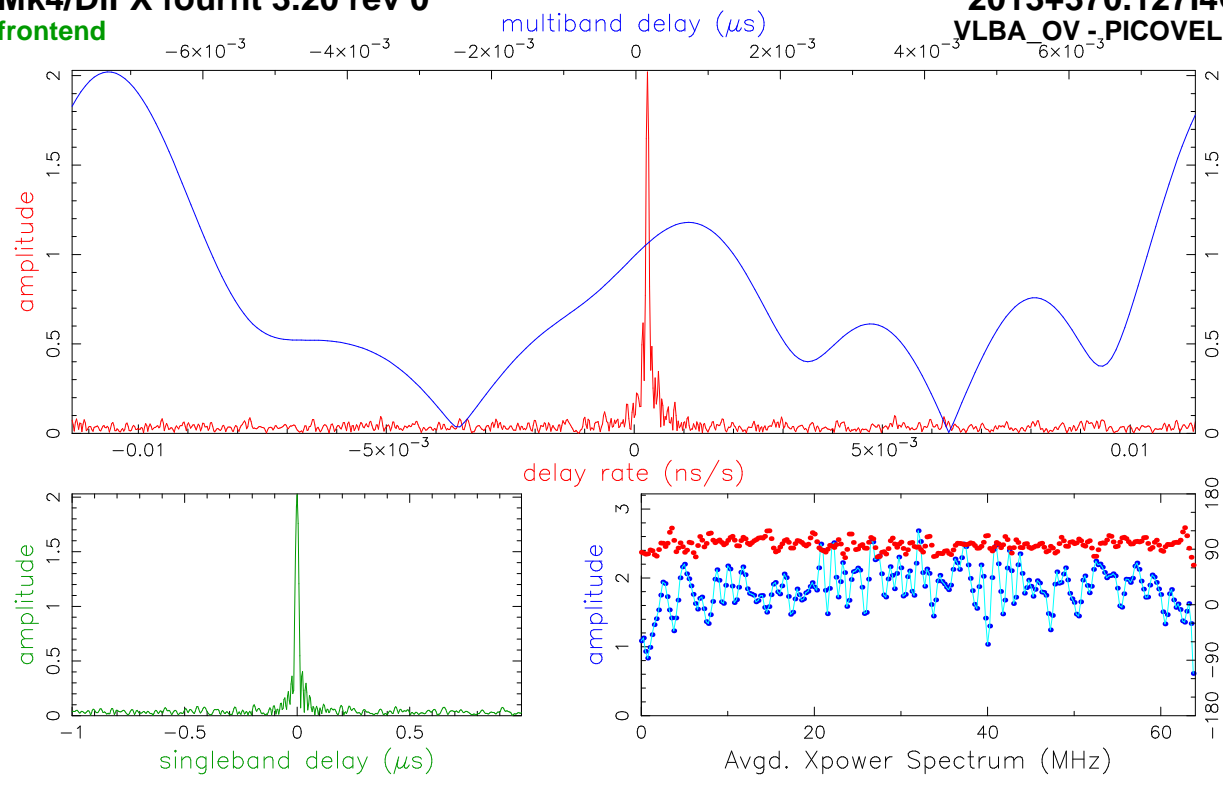
Fringe quality 9  
SNR 7.6  
Int time 177.278  
Amp 0.210  
Phase 76.6  
PFD 3.6e-06  
Delays (us)  
SBD 0.002317  
MBD 0.002001  
Fringe rate (Hz)  
-0.004444  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 004000.00  
Stop 004300.22  
FRT 004130.00  
Corr/FF/build  
2020:070:101629  
2020:071:132540  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



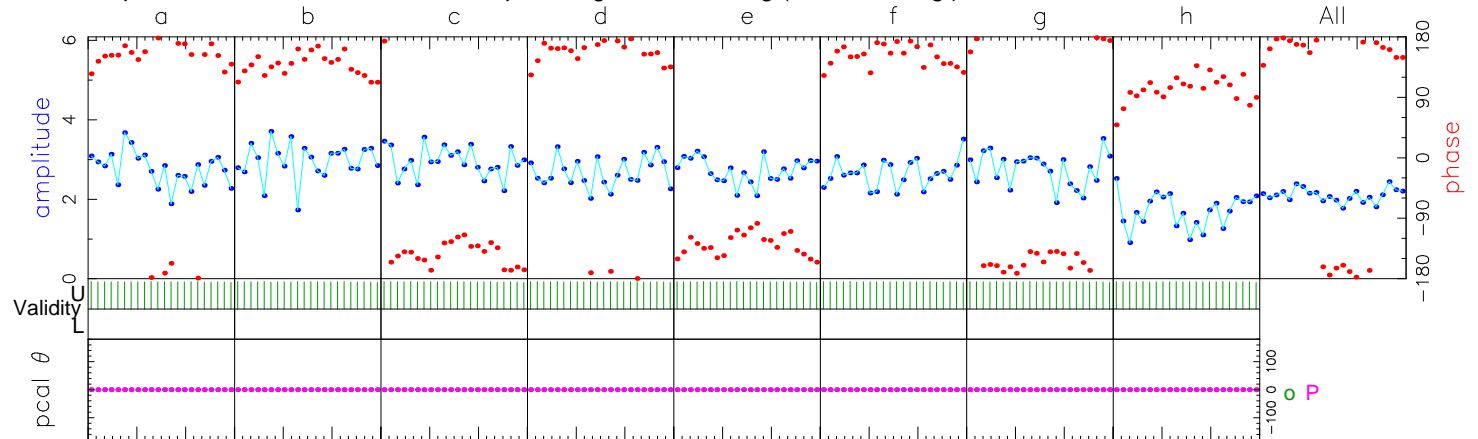
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	351/0	351/0	351/0	351/0	351/0	351/0	351/0	351/0		
o	1000	1000	1000	1000	1000	1000	1000	1000		
p	1000	1000	1000	1000	1000	1000	1000	1000		
o:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
o:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
o	1000	1000	1000	1000	1000	1000	1000	1000		
p	1000	1000	1000	1000	1000	1000	1000	1000		
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
p	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	-1.19817095300E+03									
Sband delay (usec)	-1.19817063703E+03									
Phase delay (usec)	-1.19817295156E+03									
Delay rate (us/s)	1.30040619336E-01									
Total phase (deg)			-17.1							
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)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
pcal $\theta$										
sb window (us)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
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)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
pcal $\theta$										
sb window (us)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
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)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
pcal $\theta$										
sb window (us)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										

o: az 78.2 el 60.0 pa -78.1 p: az 74.5 el 67.4 pa -89.2 u,v (fr/asec) -928.054 848.138 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/op..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/op.W.322.12714G



Fringe quality 5  
 SNR 74.1  
 Int time 178.197  
 Amp 2.030  
 Phase 172.6  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.000801  
 MBD -0.007336  
 Fringe rate (Hz) 0.022530  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132540  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec

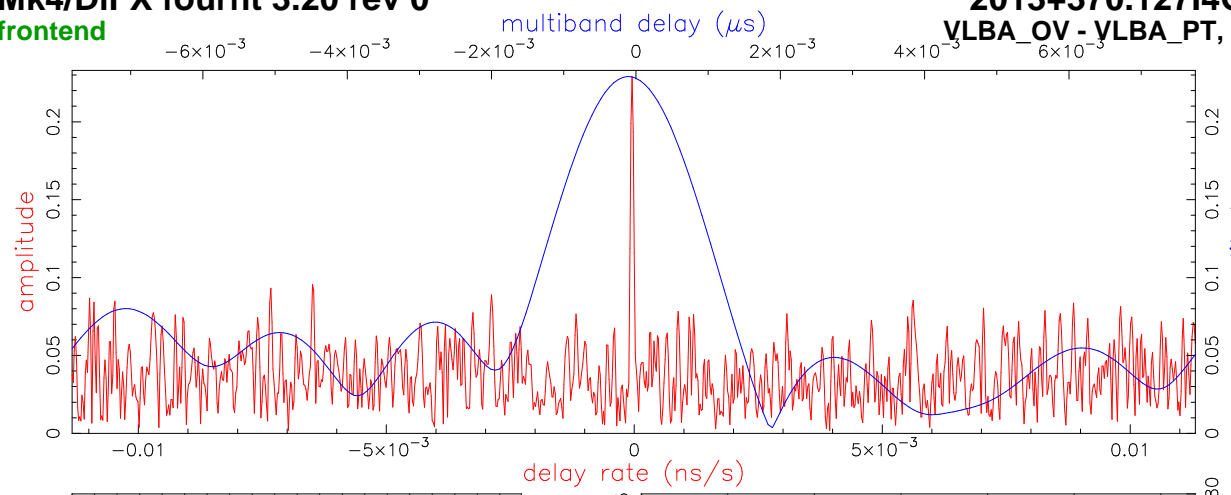


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
o	1000	1000	1000	1000	1000	1000	1000	1000		
P	1000	1000	1000	1000	1000	1000	1000	1000		
o:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
o:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
o	1000	1000	1000	1000	1000	1000	1000	1000		
P	1000	1000	1000	1000	1000	1000	1000	1000		
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
P	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	159.3	137.8	-145.2	160.6	-129.4	151.5	-162.7	100.5		
Sband delay (usec)	2.6	2.9	2.8	2.6	2.6	2.6	2.6	1.6		
Phase delay (usec)	256.5	256.7	256.6	256.2	256.2	256.4	256.4	254.9		
Delay rate (us/s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total phase (deg)			218.4							
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)										
PC period (AP's) 5, 5										
SampCntNorm: enabled										
nlags: 256										
t_cohere infinite										
simultaneous interpolator										

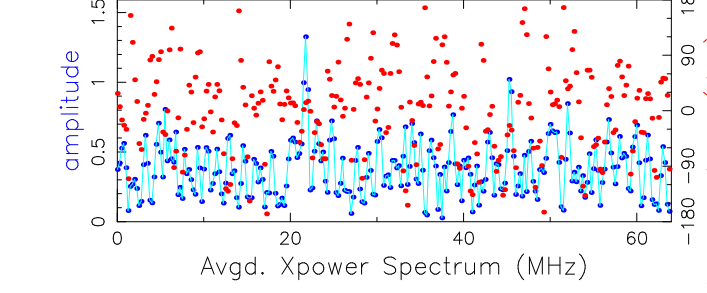
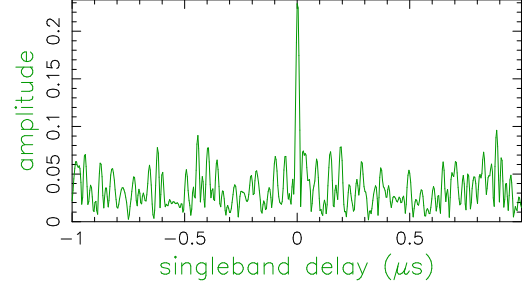
ph/seg (deg) 16.4 3.6 Search (1024X32) 2.001  
 amp/seg (%) 8.9 6.3 Interp. 0.000  
 ph/frq (deg) 46.4 2.2 Inc. seg. avg. 2.101  
 amp/frq (%) 30.9 3.8 Inc. frq. avg. 2.534  
 o: az 78.2 el 60.0 pa -78.1 P: az 295.8 el 30.5 pa 64.7 u,v (fr/asec) -11278.208 -2374.360  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/oP..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/oP.W.325.12714G

Mk4/DiFX fourfit 3.20 rev 0  
frontend

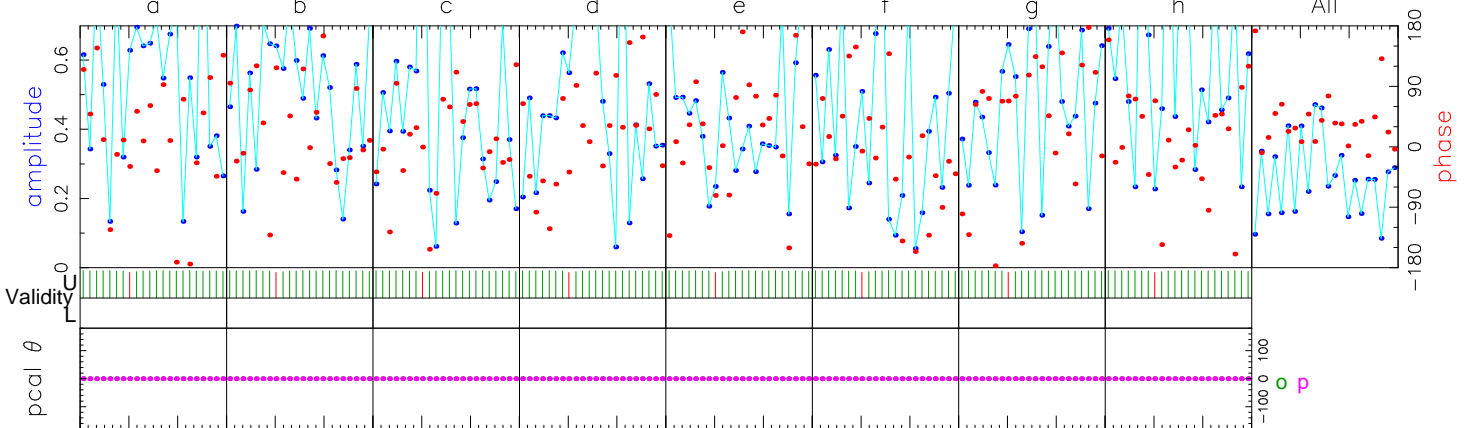
2013+370.12714G, No0070, op  
VLBA\_OV - VLBA\_PT, fgroup W, pol RR



Fringe quality 9  
SNR 8.5  
Int time 177.279  
Amp 0.233  
Phase 26.8  
PFD 4.0e-09  
Delays (us)  
SBD 0.001592  
MBD -0.000073  
Fringe rate (Hz)  
-0.003614  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 004000.00  
Stop 004300.22  
FRT 004130.00  
Corr/FF/build  
2020:070:101629  
2020:071:132542  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"



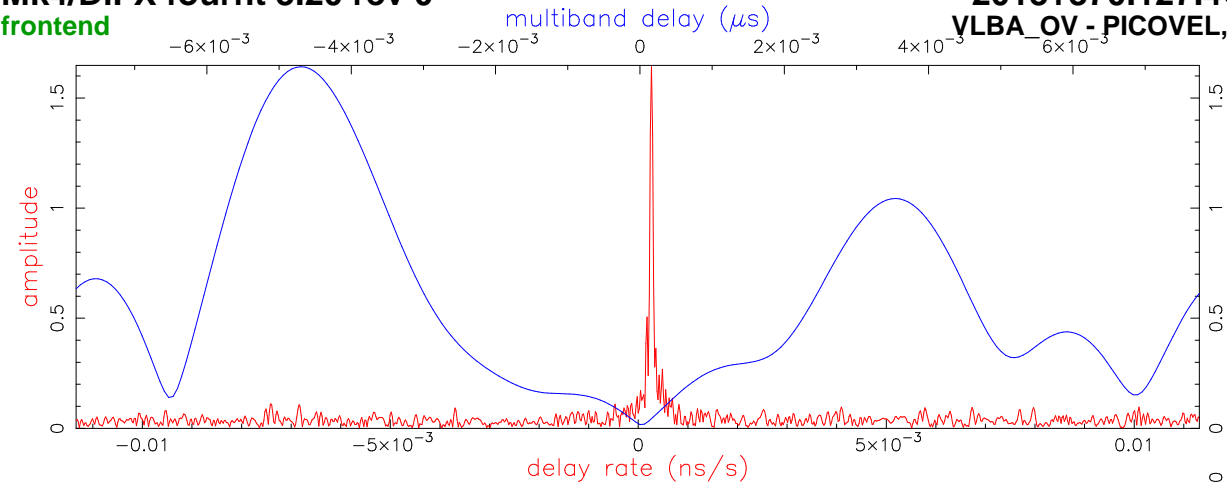
Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	351/0	351/0	351/0	351/0	351/0	351/0	352/0	352/0		
o	1000	1000	1000	1000	1000	1000	1000	1000	Ampl.	0.2
p	1000	1000	1000	1000	1000	1000	1000	1000	Sbd box	257.4
o:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	APs used	
o:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC freqs	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC phase	
p	1000	1000	1000	1000	1000	1000	1000	1000	Mani PC	
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	PC amp	
p	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
									Tracks	
									Tracks	
Group delay (usec)(sbd)	-1.19817302744E+03								Resid mbdelay (usec)	-7.34118E-05 +/- 1.3E-04
Sband delay (usec)	-1.19817136203E+03								Resid sbdelay (usec)	1.59200E-03 +/- 1.0E-03
Phase delay (usec)	-1.19817295316E+03								Resid phdelay (usec)	8.65832E-07 +/- 4.4E-07
Delay rate (us/s)	1.30040628969E-01								Resid rate (us/s)	-4.19551E-08 +/- 4.2E-09
Total phase (deg)			-66.8						Resid phase (deg)	26.8 +/- 13.5
	RMS	Theor.	Amplitude	0.233 +/- 0.027					PCal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
ph/seg (deg)	44.3	31.6	Search (1024X32)	0.228					PCal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
amp/seg (%)	48.0	55.2	Interp.	0.000					Bits/sample: 2x2	mb window (us) -0.008 0.008
ph/frq (deg)	25.6	19.1	Inc. seg. avg.	0.226					Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
amp/frq (%)	17.4	33.3	Inc. frq. avg.	0.233					Data rate(Mb/s): 2048	ion window (TEC) 0.00 0.00
o: az 78.2 el 60.0 pa -78.1									nlags: 256	t_cohere infinite
p: az 74.5 el 67.4 pa -89.2										
u,v (fr/asec) -928.054 848.138										
Control file: cf_1234_gmva	Input file: /Exps/c192c/v1_CygA2/1234/No0070/op..12714G	Output file: /Exps/c192c/v1_CygA2/1234/No0070/op.W.340.12714G								simultaneous interpolator

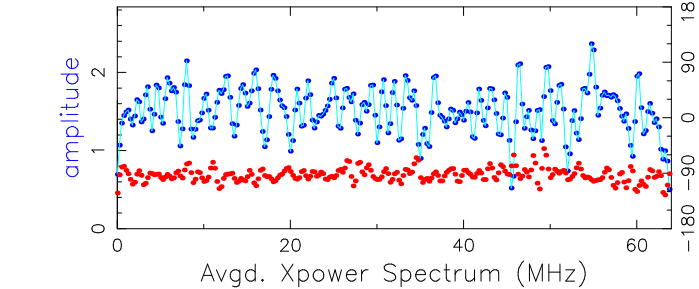
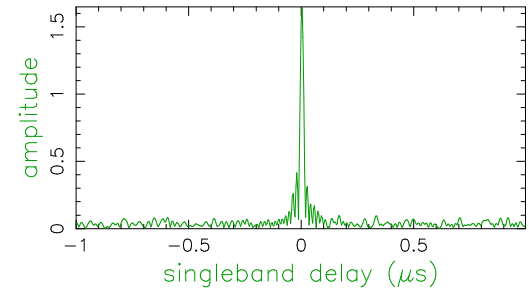
Mk4/DiFX fourfit 3.20 rev 0  
frontend

2013+370.12714G, No0070, oP  
VLBA\_OV - PICOVEL, fgroup W, pol RR



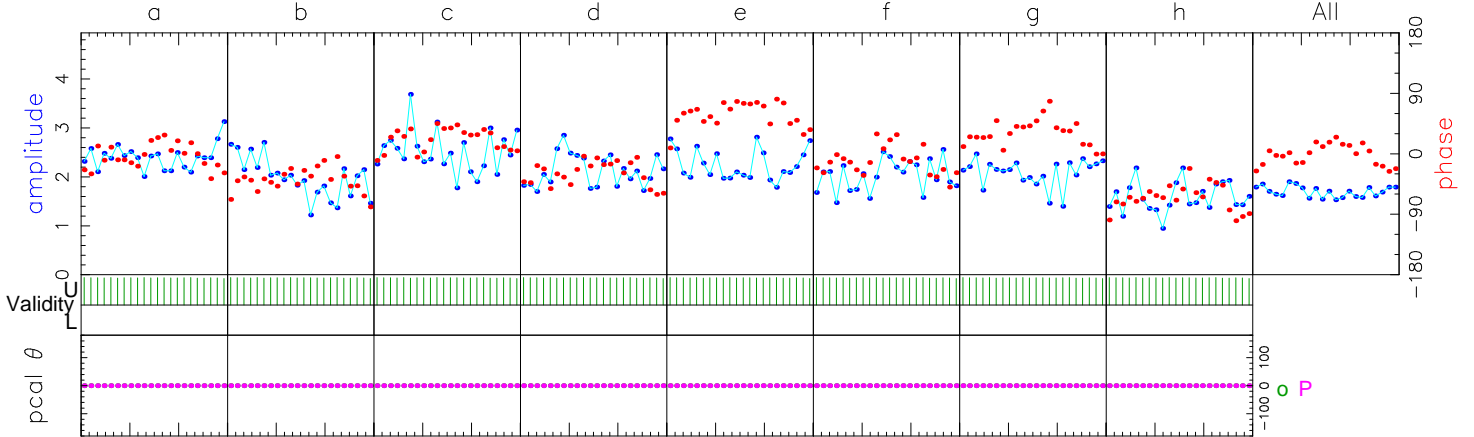
Fringe quality 5

SNR 60.2  
Int time 178.197  
Amp 1.648  
Phase -1.9  
PFD 0.0e+00  
Delays (us)  
SBD 0.003166  
MBD -0.004722  
Fringe rate (Hz)  
0.022548  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512



Exp. c192c  
Yr:day 16383  
Yr:day 2019:279  
Start 004000.00  
Stop 004300.22  
FRT 004130.00  
Corr/FF/build  
2020:070:101629  
2020:071:132543  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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
	-4.3	-40.0	22.0	-29.0	57.1	-10.8	29.8	-64.9	Phase	-1.9
	2.3	1.9	2.4	2.0	2.1	1.9	2.0	1.5	Ampl.	2.0
	257.3	257.4	257.3	256.8	256.9	256.9	256.9	255.4	Sbd box	257.8
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
P	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
o:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
P	1000	1000	1000	1000	1000	1000	1000	1000		
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
P	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

Group delay (usec)(sbd) 7.77770001501E+03 Apriori delay (usec) 7.77768911223E+03 Resid mbdelay (usec) -4.72222E-03 +/- 1.8E-05  
 Sband delay (usec) 7.77769227773E+03 Apriori clock (usec) 1.6820730E+01 Resid sbdelay (usec) 3.16550E-03 +/- 1.4E-04  
 Phase delay (usec) 7.77768911217E+03 Apriori clockrate (us/s) 3.5398100E-07 Resid phdelay (usec) -6.01962E-08 +/- 6.1E-08  
 Delay rate (us/s) 1.56325806022E+00 Apriori rate (us/s) 1.56325779845E+00 Resid rate (us/s) 2.61765E-07 +/- 5.9E-10  
 Total phase (deg) 43.9 Apriori accel (us/s/s) -4.11220419917E-05 Resid phase (deg) -1.9 +/- 1.9

RMS Theor. Amplitude 1.648 +/- 0.027 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 ph/seg (deg) 15.0 4.5 Search (1024X32) 1.611 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 amp/seg (%) 7.3 7.8 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 ph/frq (deg) 43.4 2.7 Inc. seg. avg. 1.695 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 amp/frq (%) 27.4 4.7 Inc. frq. avg. 2.017 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00

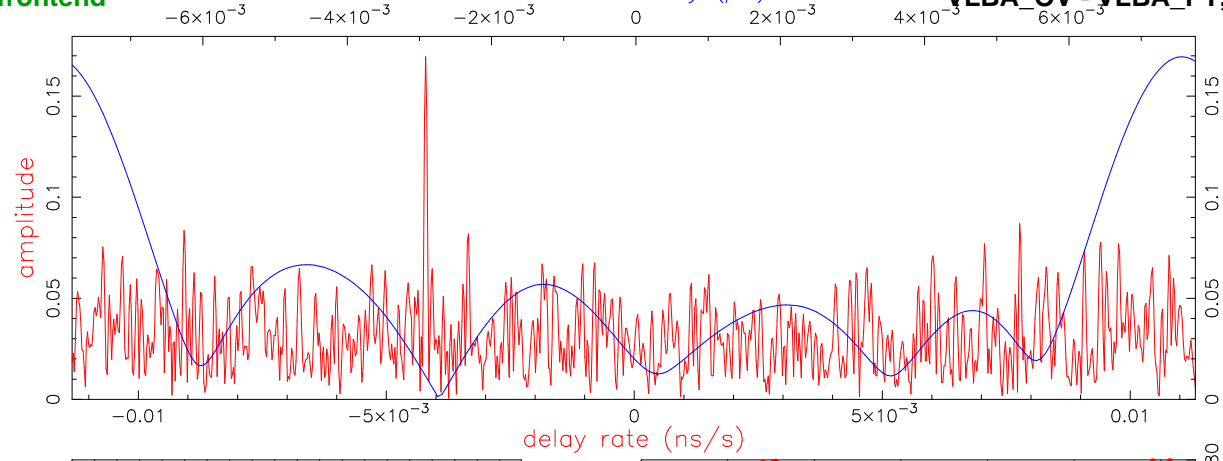
o: az 78.2 el 60.0 pa -78.1 P: az 295.8 el 30.5 pa 64.7 u,v (fr/asec) -11278.208 -2374.360 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/oP..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/oP.W.345.12714G



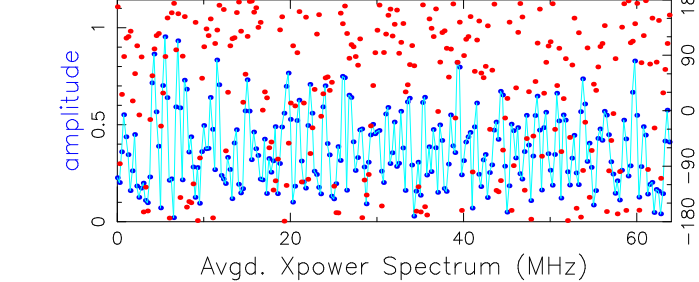
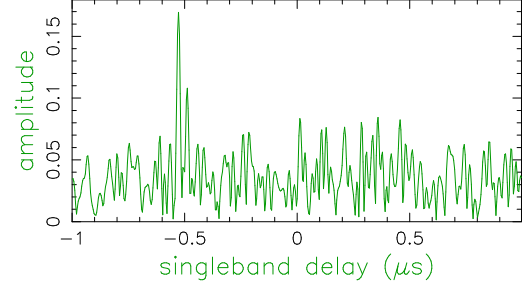
Mk4/DiFX fourfit 3.20 rev 0  
frontend

2013+370.12714G, No0070, op  
VLBA\_OV - VLBA\_PT, fgroup W, pol LR

multiband delay ( $\mu$ s)

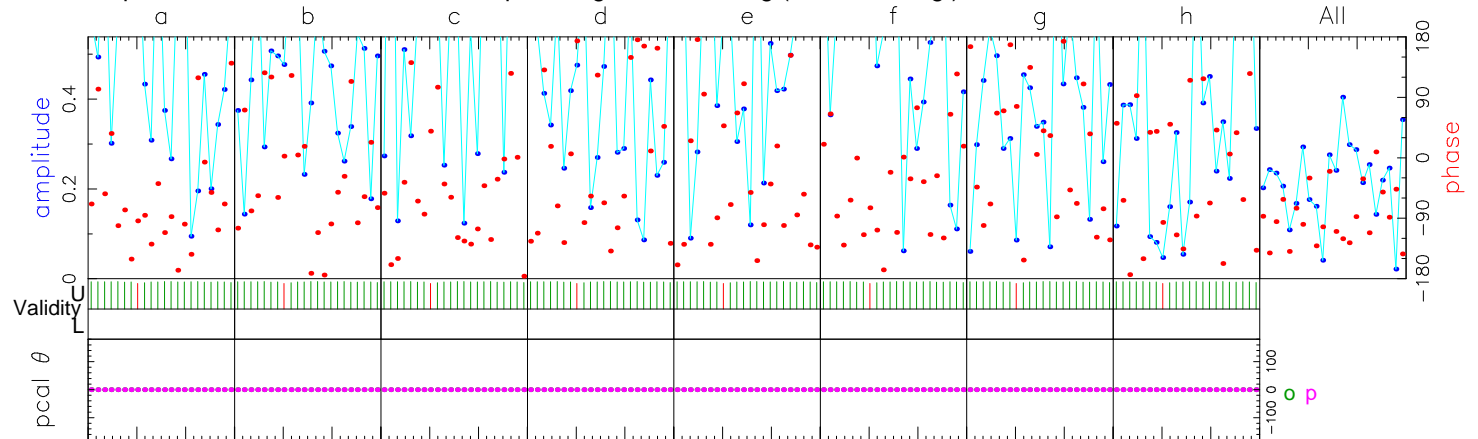


Fringe quality 0  
SNR 6.2  
Int time 177.279  
Amp 0.180  
Phase -93.7  
PFD 8.6e-02  
Delays (us)  
SBD -0.527303  
MBD -0.008061  
Fringe rate (Hz)  
-0.363838  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 004000.00  
Stop 004300.22  
FRT 004130.00  
Corr/FF/build  
2020:070:101629  
2020:071:132545  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"



Avgd. Xpower Spectrum (MHz)

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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
	-92.8	-73.6	-92.7	-118.9	-121.2	-65.2	-91.6	-108.8	Phase	-93.7
	0.3	0.1	0.2	0.2	0.2	0.3	0.1	0.1	Ampl.	0.2
	151.1	215.2	37.3	225.9	291.1	341.2	373.4	226.6	Sbd box	122.0
U/L	351/0	351/0	351/0	351/0	351/0	351/0	352/0	352/0	APs used	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
p	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
o:p	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	
p	1000	1000	1000	1000	1000	1000	1000	1000		
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
p	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	-1.19869663987E+03		Apriori delay (usec)		-1.19817295403E+03		Resid mbdelay (usec)		-8.06084E-03	+/- 1.8E-04
Sband delay (usec)	-1.19870025703E+03		Apriori clock (usec)		4.6843319E+00		Resid sbdelay (usec)		-5.27303E-01	+/- 1.4E-03
Phase delay (usec)	-1.19817295705E+03		Apriori clockrate (us/s)		-2.0290559E-07		Resid phdelay (usec)		-3.02133E-06	+/- 6.0E-07
Delay rate (us/s)	1.30036447121E-01		Apriori rate (us/s)		1.30040670925E-01		Resid rate (us/s)		-4.22380E-06	+/- 5.8E-09
Total phase (deg)			Apriori accel (us/s/s)		9.22192402290E-06		Resid phase (deg)		-93.7	+/- 18.6

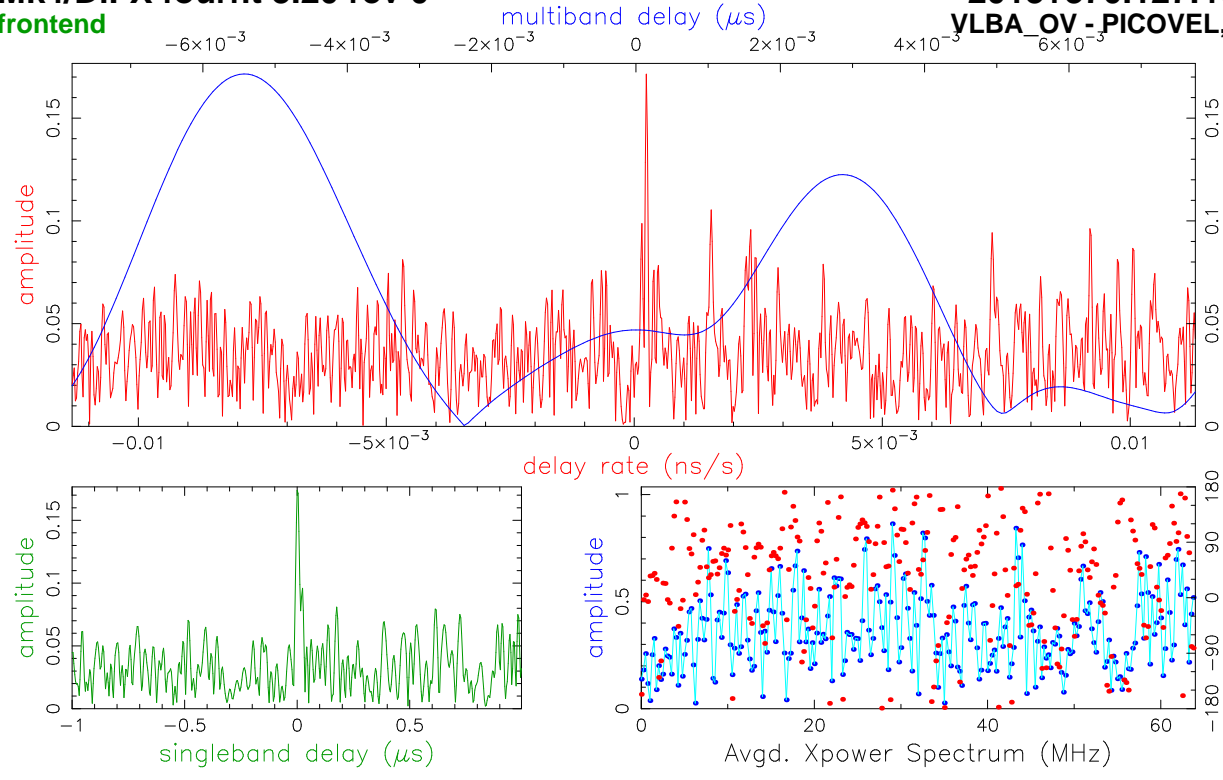
ph/seg (deg) 42.5 43.5 Search (1024X32) 0.165 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 59.6 75.9 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 21.8 26.3 Inc. seg. avg. 0.179 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 42.0 45.8 Inc. frq. avg. 0.173 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 78.2 el 60.0 pa -78.1 p: az 74.5 el 67.4 pa -89.2 u,v (fr/asec) -928.054 848.138 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/op..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/op.W.361.12714G

Mk4/DiFX fourfit 3.20 rev 0

frontend

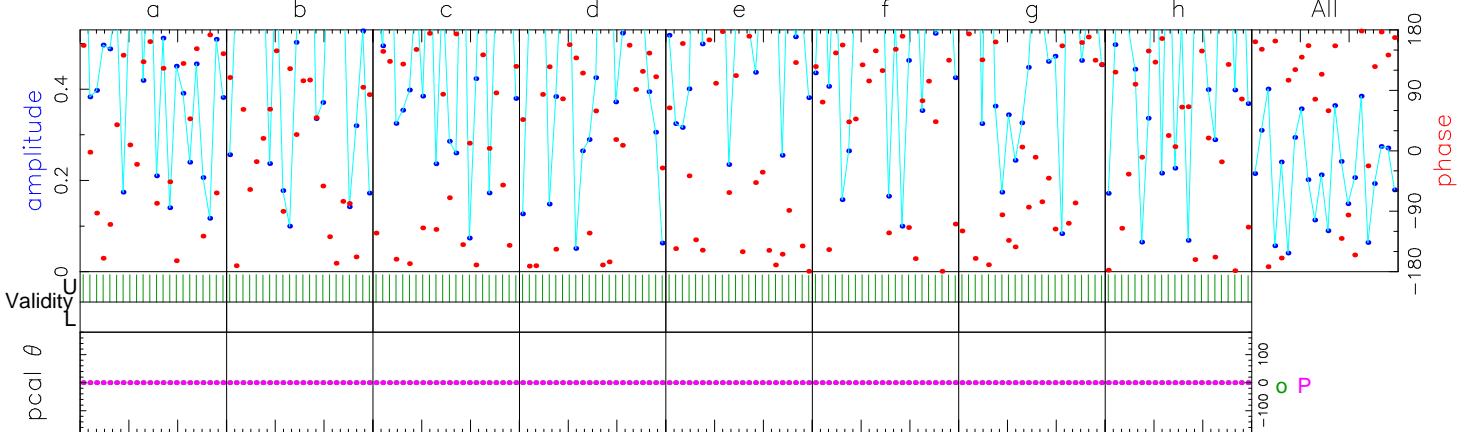
2013+370.12714G, No0070, oP

VLBA\_OV - PICOVEL, fgroup W, pol LR



Fringe quality 0  
 SNR 6.4  
 Int time 178.197  
 Amp 0.177  
 Phase 161.8  
 PFD 1.6e-02  
 Delays (us)  
 SBD 0.001638  
 MBD -0.005474  
 Fringe rate (Hz)  
 0.021964  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132545  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



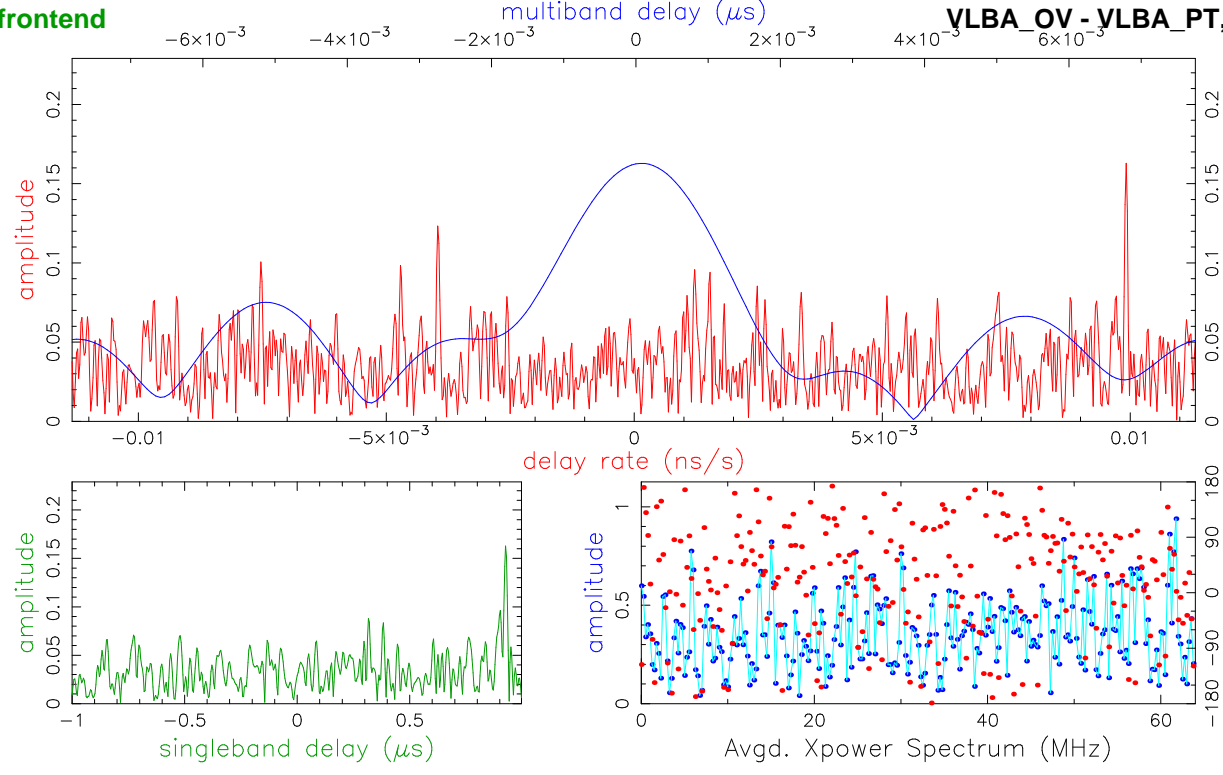
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	165.7	101.6	174.5	141.1	-162.0	128.4	-143.9	112.3	Phase	161.8
	0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.1	Ampl.	0.2
	442.5	249.1	258.0	257.2	257.1	256.6	161.9	70.8	Sbd box	257.4
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
P	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
o:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
P	1000	1000	1000	1000	1000	1000	1000	1000		
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
P	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

Group delay (usec)(sbd) 7.77768363782E+03 Apriori delay (usec) 7.77768911223E+03 Resid mbdelay (usec) -5.47440E-03 +/- 1.7E-04  
 Sband delay (usec) 7.77769075048E+03 Apriori clock (usec) 1.6820730E+01 Resid sbdelay (usec) 1.63825E-03 +/- 1.3E-03  
 Phase delay (usec) 7.77768911744E+03 Apriori clockrate (us/s) 3.5398100E-07 Resid phdelay (usec) 5.21890E-06 +/- 5.7E-07  
 Delay rate (us/s) 1.56325805343E+00 Apriori rate (us/s) 1.56325779845E+00 Resid rate (us/s) 2.54979E-07 +/- 5.5E-09  
 Total phase (deg) 207.6 Apriori accel (us/s/s) -4.11220419917E-05 Resid phase (deg) 161.8 +/- 17.8

ph/seg (deg) 59.4 41.7 Search (1024X32) 0.165 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 64.1 72.7 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 44.8 25.1 Inc. seg. avg. 0.175 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 55.4 43.9 Inc. frq. avg. 0.194 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 78.2 el 60.0 pa -78.1 P: az 295.8 el 30.5 pa 64.7 u,v (fr/asec) -11278.208 -2374.360 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/oP..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/oP.W.365.12714G

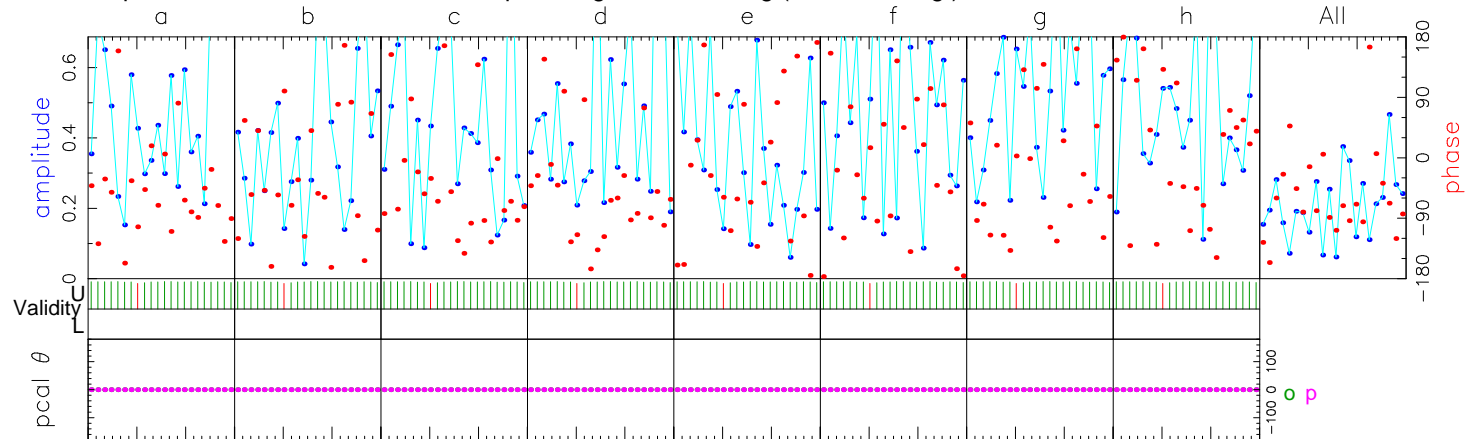
Mk4/DiFX fourfit 3.20 rev 0  
frontend

2013+370.12714G, No0070, op  
VLBA\_OV - VLBA\_PT, fgroup W, pol RL



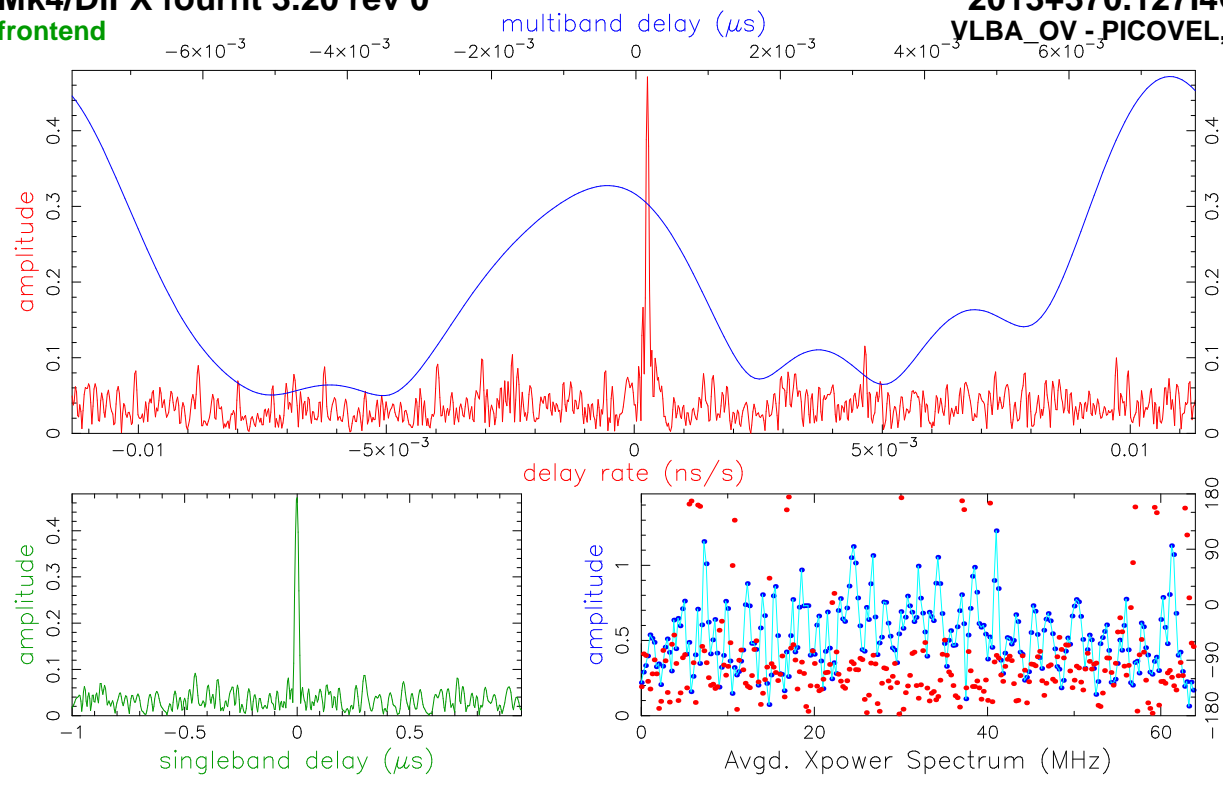
Fringe quality 0  
SNR 5.9  
Int time 177.278  
Amp 0.229  
Phase -75.0  
PFD 3.0e-01  
Delays (us)  
SBD 0.926396  
MBD 0.000085  
Fringe rate (Hz) 0.856036  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 004000.00  
Stop 004300.22  
FRT 004130.00  
Corr/FF/build  
2020:070:101629  
2020:071:132547  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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
	-69.6	-76.9	-79.3	-77.2	-106.5	-50.5	-65.3	-136.9	Phase	-75.0
	0.5	0.2	0.4	0.4	0.1	0.1	0.3	0.0	Ampl.	0.2
	493.9	488.3	69.4	45.8	169.9	277.5	359.3	87.8	Sbd box	494.2
U/L	351/0	351/0	351/0	351/0	351/0	351/0	351/0	351/0	APs used	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
p	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
o:p	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	
p	1000	1000	1000	1000	1000	1000	1000	1000		
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
p	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	-1.19725099414E+03		Apriori delay (usec)		-1.19817295403E+03		Resid mbdelay (usec)		8.48865E-05	+/- 1.8E-04
Sband delay (usec)	-1.19724655753E+03		Apriori clock (usec)		4.6843319E+00		Resid sbdelay (usec)		9.26396E-01	+/- 1.4E-03
Phase delay (usec)	-1.19817295645E+03		Apriori clockrate (us/s)		-2.0290559E-07		Resid phdelay (usec)		-2.41723E-06	+/- 6.2E-07
Delay rate (us/s)	1.30050608654E-01		Apriori rate (us/s)		1.30040670925E-01		Resid rate (us/s)		9.93773E-06	+/- 6.0E-09
Total phase (deg)			Apriori accel (us/s/s)		9.22192402290E-06		Resid phase (deg)		-75.0	+/- 19.3

ph/seg (deg) 54.4 45.1 Search (1024X32) 0.158 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 68.5 78.8 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 30.5 27.3 Inc. seg. avg. 0.227 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 68.0 47.6 Inc. frq. avg. 0.209 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 78.2 el 60.0 pa -78.1 p: az 74.5 el 67.4 pa -89.2 u,v (fr/asec) -928.054 848.138 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/op..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/op.W.377.12714G

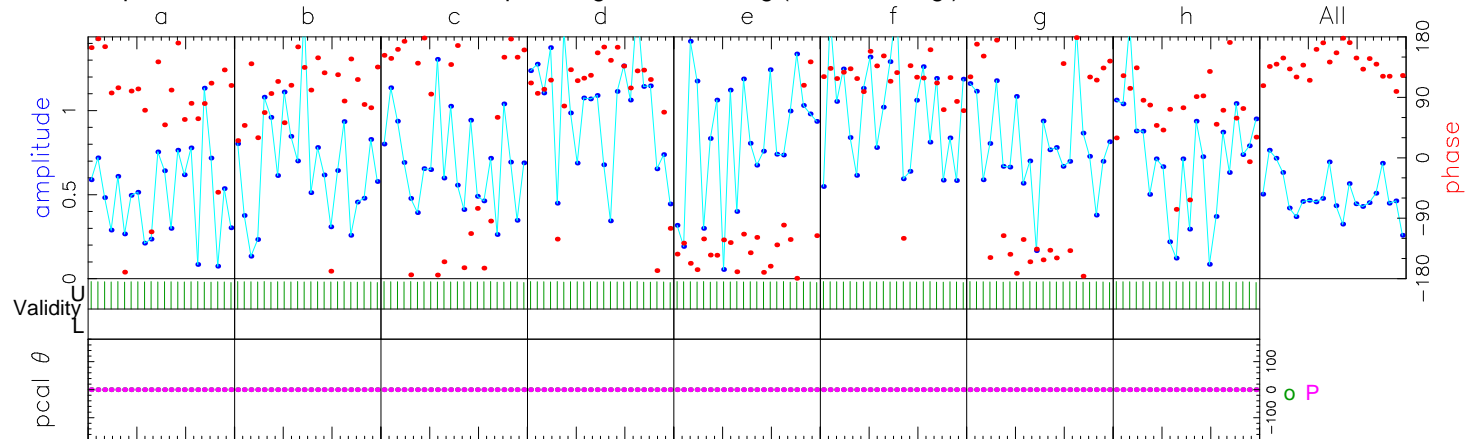


Fringe quality 7

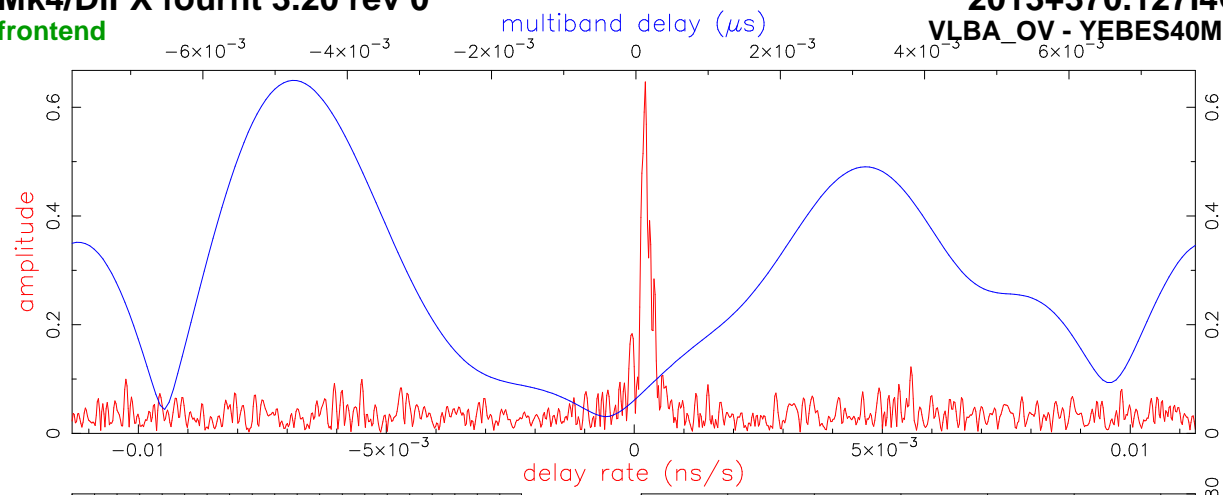
SNR 17.5  
 Int time 178.197  
 Amp 0.480  
 Phase 138.5  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.001763  
 MBD 0.007339  
 Fringe rate (Hz) 0.022780  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512

Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132548  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

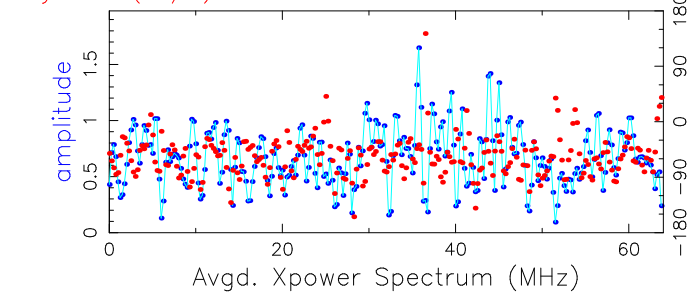
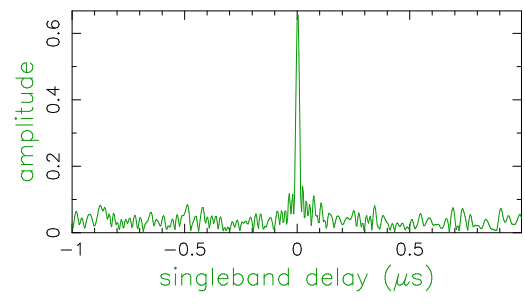
Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



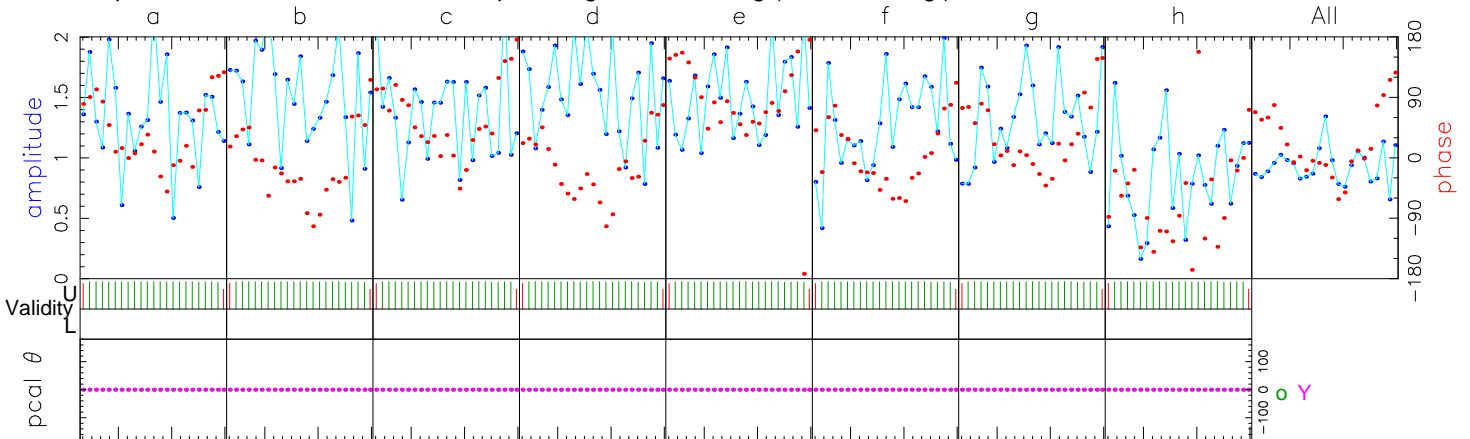
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
o	1000	1000	1000	1000	1000	1000	1000	1000		
P	1000	1000	1000	1000	1000	1000	1000	1000		
o:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
o:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
o	1000	1000	1000	1000	1000	1000	1000	1000		
P	1000	1000	1000	1000	1000	1000	1000	1000		
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
P	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	7.77768082573E+03		Apriori delay (usec)		7.77768911223E+03		Resid mbdelay (usec)		7.33850E-03	+/- 6.2E-05
Sband delay (usec)	7.77768734923E+03		Apriori clock (usec)		1.6820730E+01		Resid sbdelay (usec)		-1.76300E-03	+/- 4.9E-04
Phase delay (usec)	7.77768911669E+03		Apriori clockrate (us/s)		3.5398100E-07		Resid phdelay (usec)		4.46693E-06	+/- 2.1E-07
Delay rate (us/s)	1.56325806291E+00		Apriori rate (us/s)		1.56325779845E+00		Resid rate (us/s)		2.64456E-07	+/- 2.0E-09
Total phase (deg)	184.3		Apriori accel (us/s/s)		-4.11220419917E-05		Resid phase (deg)		138.5	+/- 6.5
ph/seg (deg)	RMS 20.4	Theor. 15.4	Amplitude 0.480 +/- 0.027	Pcal mode: MANUAL, MANUAL		PC period (AP's) 5, 5		sb window (us)		-1.000 1.000
amp/seg (%)	26.4	26.8	Search (1024X32) 0.469	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		SampCntNorm: enabled		mb window (us)		-0.008 0.008
ph/frq (deg)	49.4	9.3	Inc. seg. avg. 0.000	Bits/sample: 2x2		Sample rate(MISamp/s): 128		dr window (ns/s)		-0.011 0.011
amp/frq (%)	45.3	16.2	Inc. frq. avg. 0.616	Data rate(Mb/s): 2048		nlags: 256 t_cohere infinite		ion window (TEC)		0.00 0.00
o: az 78.2 el 60.0 pa -78.1 P: az 295.8 el 30.5 pa 64.7 u,v (fr/asec) -11278.208 -2374.360 simultaneous interpolator										
Control file: cf_1234_gmva Input file: /Exps/c192c/v1_CygA2/1234/No0070/oP..12714G Output file: /Exps/c192c/v1_CygA2/1234/No0070/oP.W.385.12714G										



Fringe quality 7  
 SNR 23.2  
 Int time 160.837  
 Amp 0.668  
 Phase 20.3  
 PFD 0.0e+00  
 Delays (us)  
 SBD 0.002212  
 MBD -0.004634  
 Fringe rate (Hz)  
 0.018509  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004016.90  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132540  
 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	319/0	319/0	319/0	319/0	319/0	319/0	319/0	319/0		
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	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		

Group delay (usec)(sbd)	7.37427346806E+03	Apriori delay (usec)		7.37427810218E+03	Resid mbdelay (usec)	-4.63412E-03	+/-	4.7E-05	
Sband delay (usec)	7.37428031418E+03	Apriori clock (usec)		6.9861164E+00	Resid sbdelay (usec)	2.21200E-03	+/-	3.7E-04	
Phase delay (usec)	7.37427810284E+03	Apriori clockrate (us/s)		-2.1901900E-07	Resid phdelay (usec)	6.55065E-07	+/-	1.6E-07	
Delay rate (us/s)	1.51861295112E+00	Apriori rate (us/s)		1.51861273625E+00	Resid rate (us/s)	2.14876E-07	+/-	1.7E-09	
Total phase (deg)		280.2	Apriori accel (us/s/s)		-4.22292803877E-05	Resid phase (deg)	20.3	+/-	4.9

ph/seg (deg)	49.4	11.9	Search (1024X32)	0.640	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000	
amp/seg (%)	45.7	20.7	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)	58.3	7.0	Inc. seg. avg.	0.916	Bits/sample: 2x2	Sample rate(MISamp/s): 128	dr window (ns/s)	-0.011	0.011	
amp/frq (%)	45.0	12.2	Inc. frq. avg.	0.894	Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00	0.00

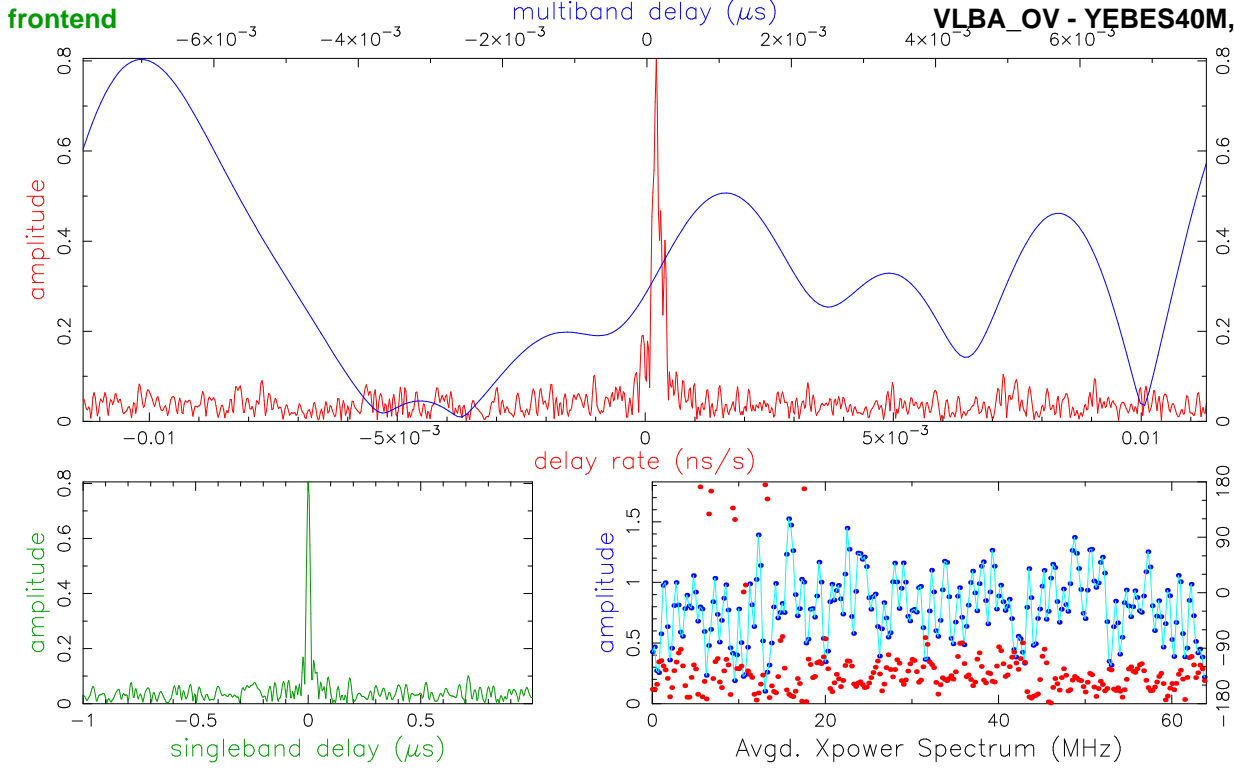
o: az 78.2 el 60.0 pa -78.1 Y: az 294.0 el 31.8 pa 60.6 u,v (fr/asec) -10958.483 -2772.911 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/oY..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/oY.W.324.12714G

Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.12714G, No0070, oY

VLBA\_OV - YEBES40M, fgroup W, pol RR

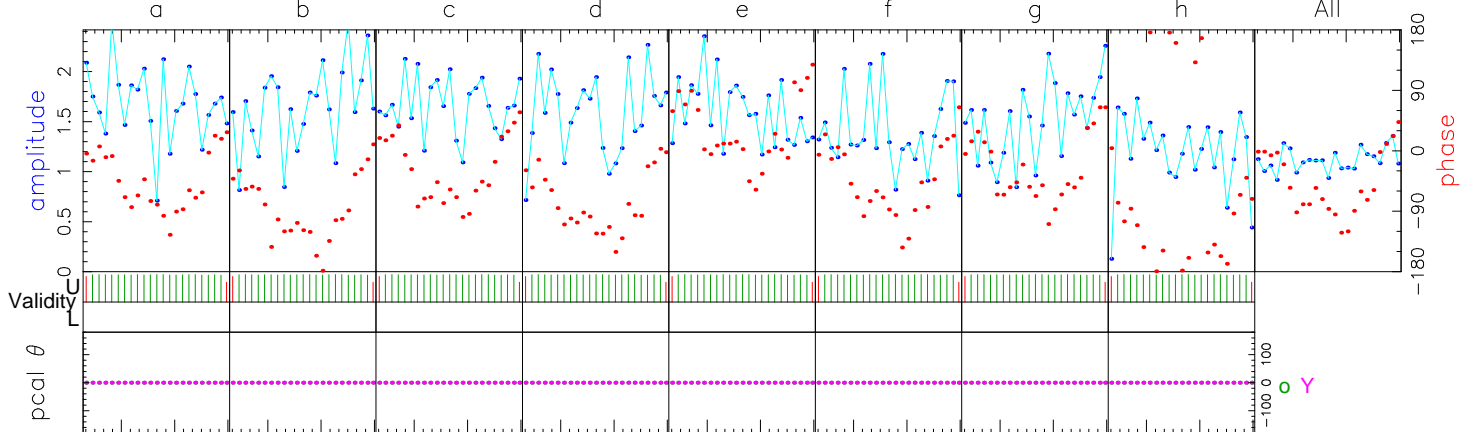


Fringe quality 6

SNR 27.9  
 Int time 160.838  
 Amp 0.806  
 Phase -49.0  
 PFD 0.0e+00  
 Delays (us)  
 SBD 0.000667  
 MBD -0.006993  
 Fringe rate (Hz) 0.018747  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512

Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004016.90  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132542  
 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



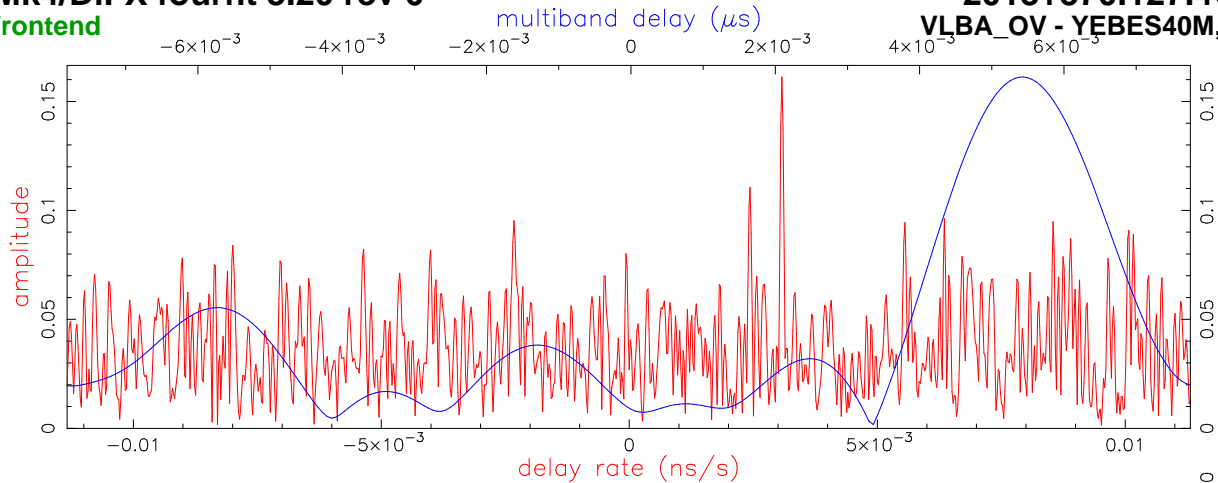
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	319/0	319/0	319/0	319/0	319/0	319/0	319/0	319/0		
o	1000	1000	1000	1000	1000	1000	1000	1000		
o:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
o:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
o	1000	1000	1000	1000	1000	1000	1000	1000		
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)		7.37427110887E+03				7.37427810218E+03				
Sband delay (usec)		7.37427876943E+03				6.9861164E+00				
Phase delay (usec)		7.37427810060E+03				-2.1901900E-07				
Delay rate (us/s)		1.51861295389E+00				1.51861273625E+00				
Total phase (deg)			210.9			-4.22292803877E-05				
				Apriori delay (usec)				Resid mbdelay (usec)	-6.99331E-03	+/- 3.9E-05
				Apriori clock (usec)				Resid sbdelay (usec)	6.67250E-04	+/- 3.1E-04
				Apriori clockrate (us/s)				Resid phdelay (usec)	-1.58040E-06	+/- 1.3E-07
				Apriori rate (us/s)				Resid rate (us/s)	2.17639E-07	+/- 1.4E-09
				Apriori accel (us/s/s)				Resid phase (deg)	-49.0	+/- 4.1
ph/seg (deg)	RMS 45.3	Theor. 9.8	Amplitude 10.1	0.806 +/- 0.029				PCal mode: MANUAL, MANUAL		
amp/seg (%)	41.1	17.2	Search (1024X32)	0.790				PCal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000
ph/frq (deg)	53.1	5.8	Interp.	0.000				Bits/sample: 2x2	mb window (us)	-0.008 0.008
amp/frq (%)	37.3	10.1	Inc. seg. avg.	1.101				Sample rate(MISamp/s): 128	dr window (ns/s)	-0.011 0.011
			Inc. frq. avg.	1.067				Data rate(Mb/s): 2048	ion window (TEC)	0.00 0.00
o: az 78.2 el 60.0 pa -78.1			Y: az 294.0 el 31.8 pa 60.6					nlags: 256 t_cohere infinite		
Control file: cf_1234_gmva			Input file: /Exps/c192c/v1_CygA2/1234/No0070/oY..12714G							simultaneous interpolator
			Output file: /Exps/c192c/v1_CygA2/1234/No0070/oY.W.341.12714G							

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frontend

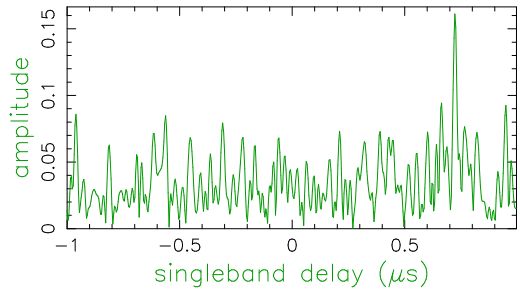
2013+370.12714G, No0070, oY

VLBA\_OV - YEBES40M, fgroup W, pol LR

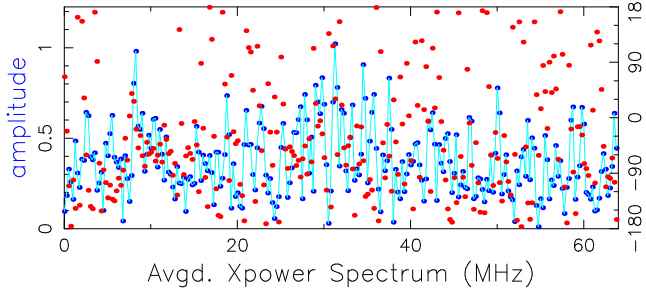


Fringe quality 0

SNR 5.6  
 Int time 160.837  
 Amp 0.167  
 Phase -84.1  
 PFD 9.2e-01  
 Delays (us)  
 SBD 0.723232  
 MBD 0.005421  
 Fringe rate (Hz)  
 0.264738  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

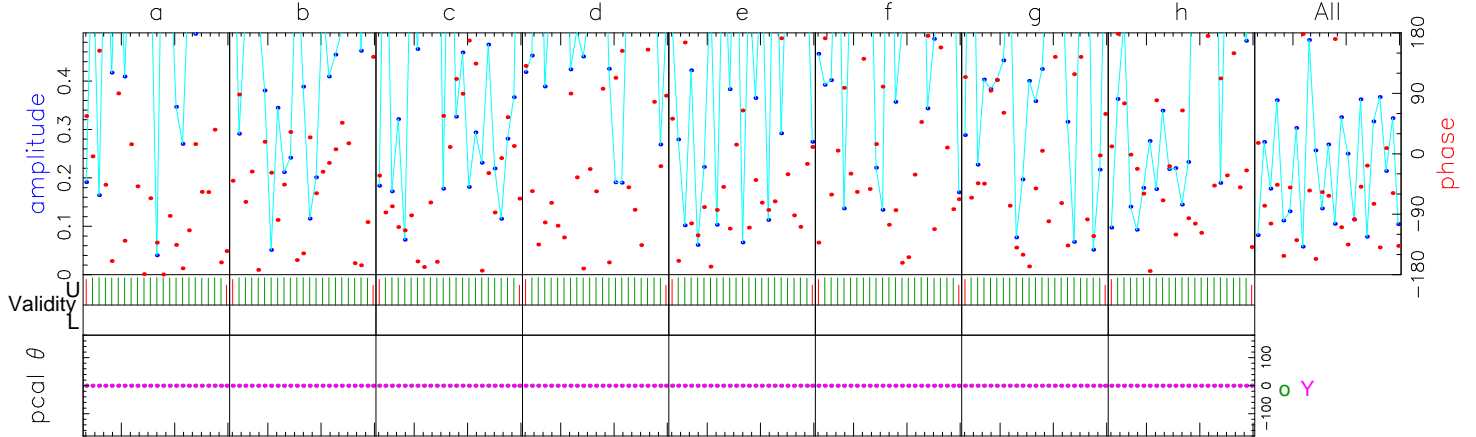


delay rate (ns/s)



Exp. c192c  
 Yr:day 16383  
 Start 2020:070:191279  
 Stop 2020:071:132545  
 FRT 2019:280:115849  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132545  
 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



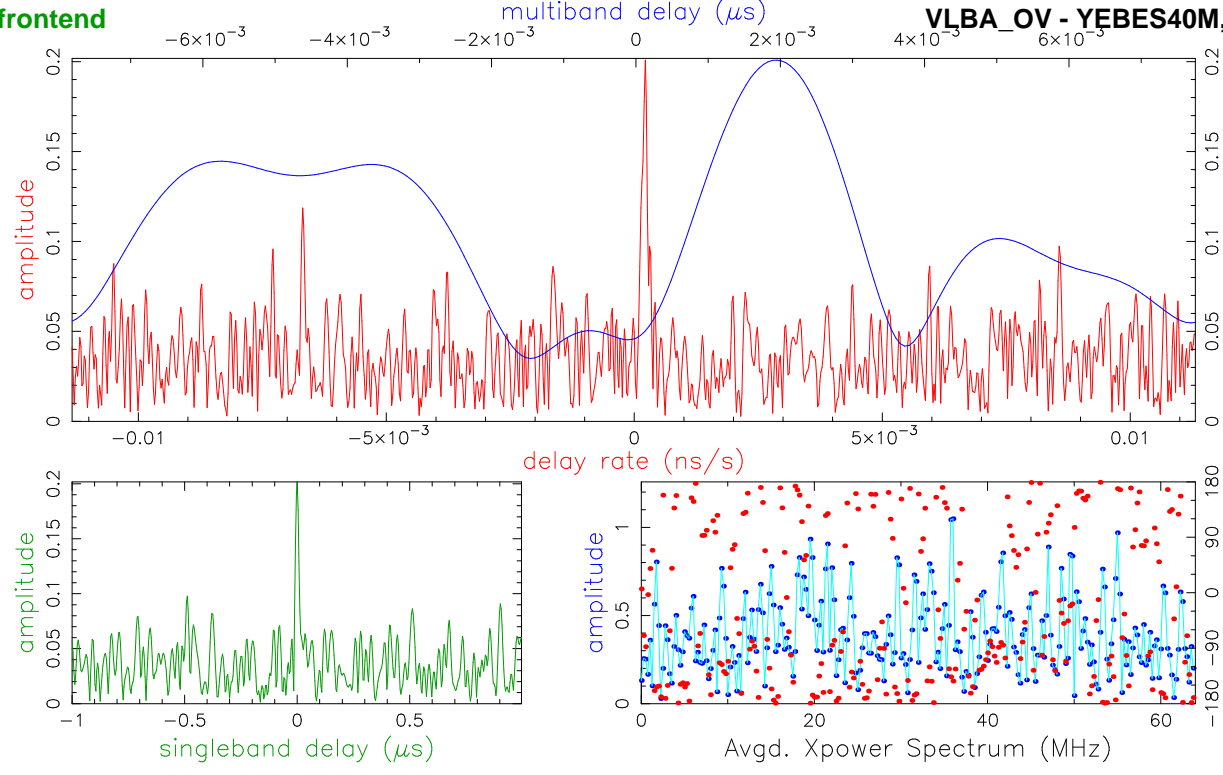
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-79.9	-68.2	-95.9	-113.4	-71.2	-73.4	-86.7	-88.0	Phase	-84.1
	0.2	0.1	0.2	0.2	0.3	0.2	0.1	0.1	Ampl.	0.2
	445.1	299.1	169.1	11.2	440.7	111.9	507.4	362.0	Sbd box	442.1
U/L	319/0	319/0	319/0	319/0	319/0	319/0	319/0	319/0	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	

Group delay (usec)(sbd)	7.37500227305E+03	Apriori delay (usec)	7.37427810218E+03	Resid mbdelay (usec)	5.42087E-03	+/-	1.9E-04
Sband delay (usec)	7.37500133393E+03	Apriori clock (usec)	6.9861164E+00	Resid sbdelay (usec)	7.23232E-01	+/-	1.5E-03
Phase delay (usec)	7.37427809947E+03	Apriori clockrate (us/s)	-2.1901900E-07	Resid phdelay (usec)	-2.71208E-06	+/-	6.6E-07
Delay rate (us/s)	1.51861580960E+00	Apriori rate (us/s)	1.51861273625E+00	Resid rate (us/s)	3.07335E-06	+/-	7.0E-09
Total phase (deg)	175.8	Apriori accel (us/s/s)	-4.22292803877E-05	Resid phase (deg)	-84.1	+/-	20.5

ph/seg (deg)	55.7	RMS	55.7	Theor.	49.0	Amplitude	0.167 +/- 0.030	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5	sb window (us)	-1.000	1.000
amp/seg (%)	82.6		82.6		85.6	Search (1024X32)	0.157	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	SampCntNorm:	enabled	mb window (us)	-0.008	0.008
ph/frq (deg)	16.2		16.2		28.9	Inc. seg. avg.	0.172	Sample rate (MSamp/s):	128	nlags:	256	dr window (ns/s)	-0.011	0.011
amp/frq (%)	30.3		30.3		50.5	Inc. frq. avg.	0.152	Data rate (Mb/s):	2048	t_cohere	infinite	ion window (TEC)	0.00	0.00

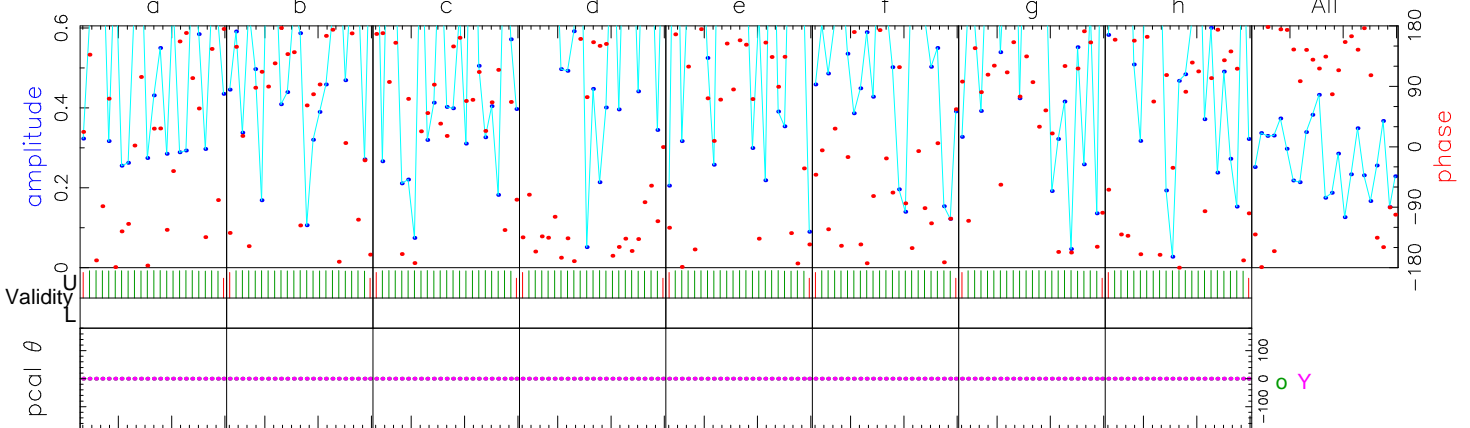
o: az 78.2 el 60.0 pa -78.1 Y: az 294.0 el 31.8 pa 60.6 u,v (fr/asec) -10958.483 -2772.911 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/oY..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/oY.W.362.12714G



Fringe quality 0  
 SNR 7.0  
 Int time 160.838  
 Amp 0.202  
 Phase 162.6  
 PFD 3.9e-04  
 Delays (us)  
 SBD -0.000851  
 MBD 0.001939  
 Fringe rate (Hz)  
 0.018322  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004016.90  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132547  
 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
	148.1	157.3	93.8	-136.5	149.6	-89.0	121.5	166.2	Phase	162.6
	0.1	0.3	0.3	0.5	0.4	0.2	0.3	0.3	Ampl.	0.3
	387.3	261.7	251.1	256.9	256.0	328.7	257.7	257.1	Sbd box	256.8
U/L	319/0	319/0	319/0	319/0	319/0	319/0	319/0	319/0	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	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)	7.37428004103E+03		Apriori delay (usec)		7.37427810218E+03		Resid mbdelay (usec)		1.93885E-03	+/- 1.6E-04
Sband delay (usec)	7.37427725143E+03		Apriori clock (usec)		6.9861164E+00		Resid sbdelay (usec)		-8.50750E-04	+/- 1.2E-03
Phase delay (usec)	7.37427810742E+03		Apriori clockrate (us/s)		-2.1901900E-07		Resid phdelay (usec)		5.24274E-06	+/- 5.3E-07
Delay rate (us/s)	1.51861294895E+00		Apriori rate (us/s)		1.51861273625E+00		Resid rate (us/s)		2.12698E-07	+/- 5.6E-09
Total phase (deg)	62.5		Apriori accel (us/s/s)		-4.22292803877E-05		Resid phase (deg)		162.6	+/- 16.4

ph/seg (deg) 48.5 39.3 Search (1024X32) 0.198 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 54.1 68.5 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 61.0 23.2 Inc. seg. avg. 0.221 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 74.8 40.4 Inc. frq. avg. 0.270 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 78.2 el 60.0 pa -78.1 Y: az 294.0 el 31.8 pa 60.6 u,v (fr/asec) -10958.483 -2772.911 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/oY..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/oY.W.381.12714G

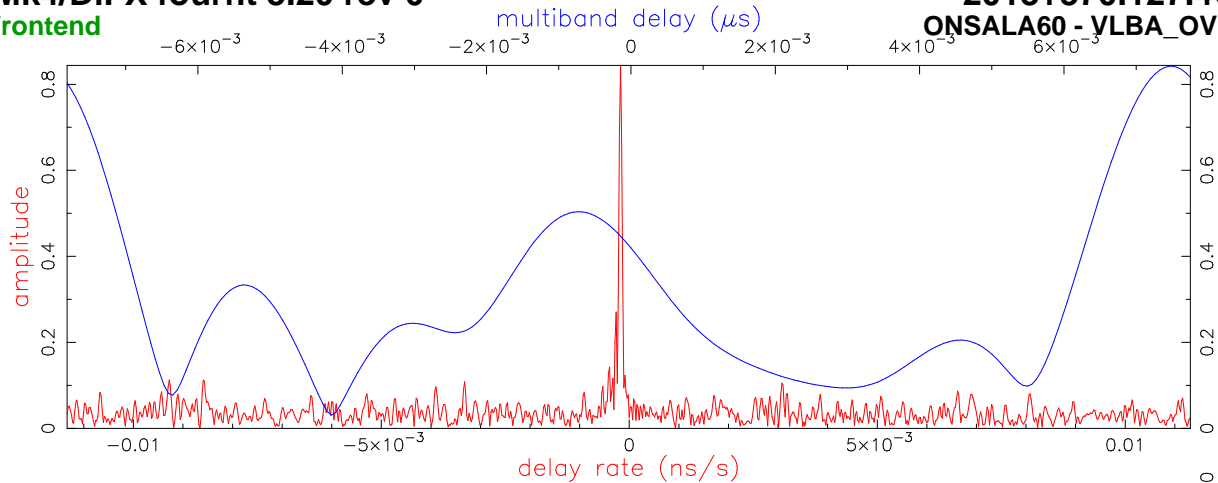


Mk4/DiFX fourfit 3.20 rev 0

frontend

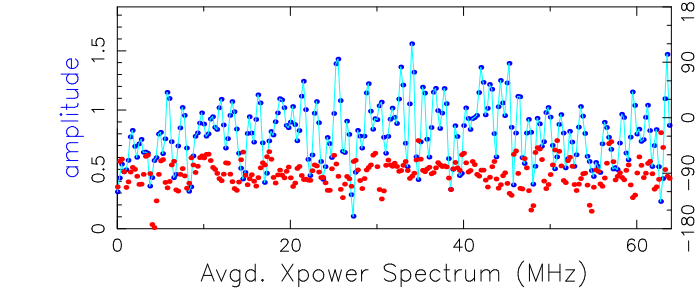
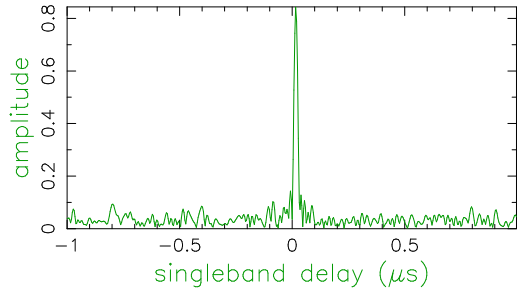
2013+370.12714G, No0070, Xo

ONSALA60 - VLBA\_OV, fgroup W, pol LL



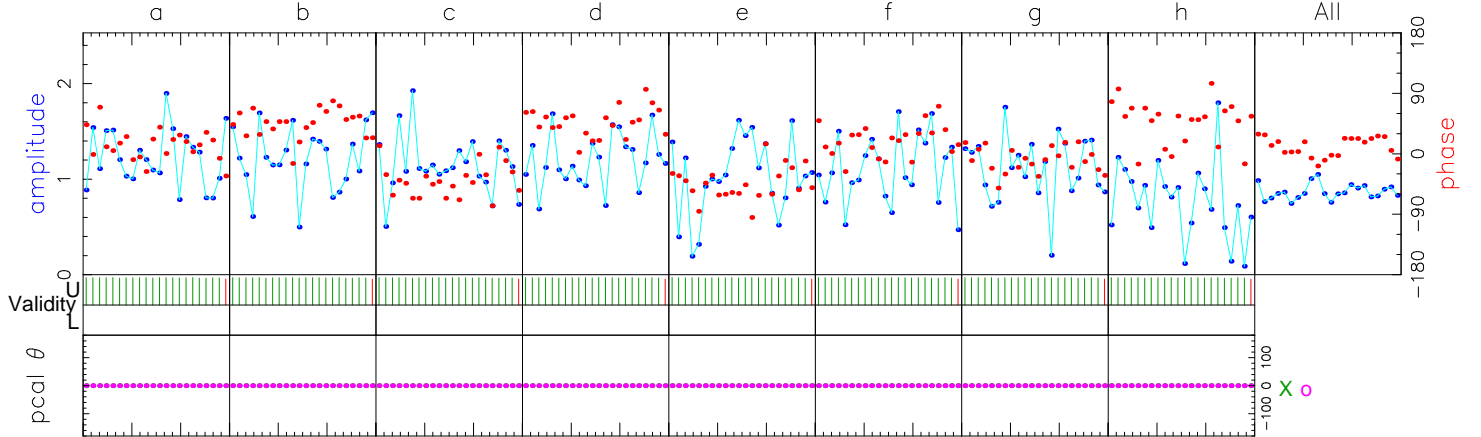
Fringe quality 6

SNR 30.8  
 Int time 178.189  
 Amp 0.844  
 Phase 10.5  
 PFD 0.0e+00  
 Delays (us)  
 SBD 0.016214  
 MBD 0.007498  
 Fringe rate (Hz)  
 -0.016094  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132541  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
X	1000	1000	1000	1000	1000	1000	1000	1000		
X:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
X:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
X	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		

Group delay (usec)(sbd)	-8.05869384932E+03	Apriori delay (usec)	-8.05871697236E+03	Resid mbdelay (usec)	7.49804E-03	+/-	3.5E-05
Sband delay (usec)	-8.05870075886E+03	Apriori clock (usec)	1.5746180E+01	Resid sbdelay (usec)	1.62135E-02	+/-	2.8E-04
Phase delay (usec)	-8.05871697202E+03	Apriori clockrate (us/s)	5.2701902E-07	Resid phdelay (usec)	3.38601E-07	+/-	1.2E-07
Delay rate (us/s)	-1.26656335639E+00	Apriori rate (us/s)	-1.26656316955E+00	Resid rate (us/s)	-1.86841E-07	+/-	1.2E-09
Total phase (deg)	-349.2	Apriori accel (us/s/s)	5.91599798048E-05	Resid phase (deg)	10.5	+/-	3.7

ph/seg (deg)	14.0	RMS	14.0	Theor.	8.7	Amplitude	0.844 +/- 0.027	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5	
amp/seg (%)	9.7	Search (1024X32)	0.799	Interp.	0.000	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000	1.000		
ph/frq (deg)	40.5	Inc. seg. avg.	0.859	Inc. frq. avg.	1.011	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008	0.008	
amp/frq (%)	26.8	Inc. frq. avg.	1.011	Sample rate (MSamp/s):	128	Data rate (Mb/s):	2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00	0.00

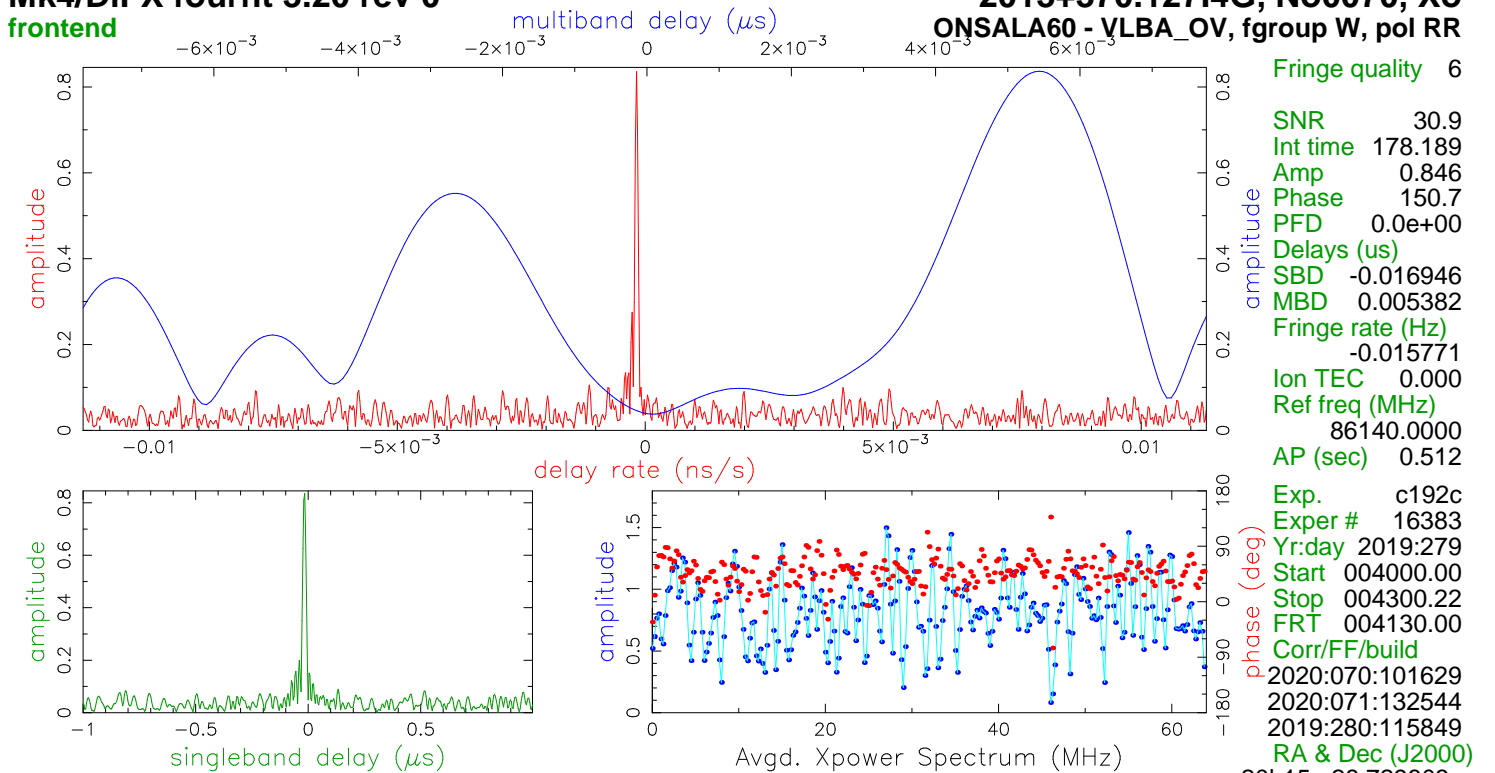
X: az 293.9 el 29.5 pa 38.1 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 9160.523 5155.058 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/Xo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/Xo.W.330.12714G

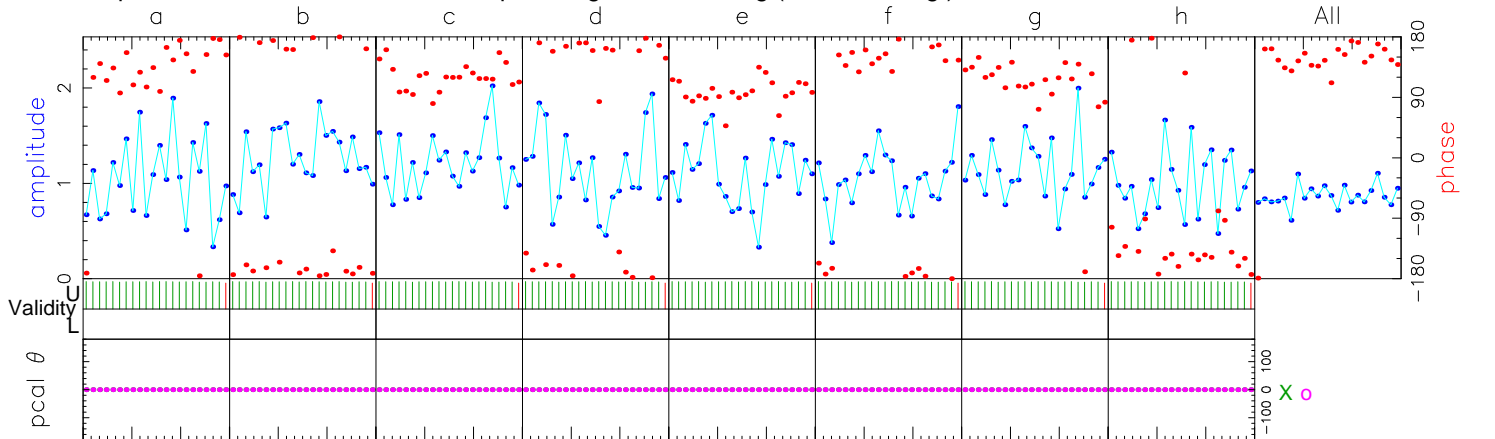
# Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.12714G, No0070, Xo  
ONSALA60 - VLBA\_OV, fgroup W, pol RR



Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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
	140.7	-174.1	119.6	178.1	97.0	161.7	118.4	-145.7	Phase	150.7
	0.9	1.2	1.1	1.1	1.1	1.0	1.0	0.9	Ampl.	1.0
	253.5	252.6	252.8	253.0	253.5	253.3	253.6	254.2	Sbd box	252.7
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
X:o	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	
o	1000	1000	1000	1000	1000	1000	1000	1000		
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

Group delay (usec)(sbd)	-8.05872721516E+03	Apriori delay (usec)	-8.05871697236E+03	Resid mbdelay (usec)	5.38220E-03	+/-	3.5E-05
Sband delay (usec)	-8.05873391861E+03	Apriori clock (usec)	1.5746180E+01	Resid sbdelay (usec)	-1.69463E-02	+/-	2.8E-04
Phase delay (usec)	-8.05871696750E+03	Apriori clockrate (us/s)	5.2701902E-07	Resid phdelay (usec)	4.86046E-06	+/-	1.2E-07
Delay rate (us/s)	-1.26656335263E+00	Apriori rate (us/s)	-1.26656316955E+00	Resid rate (us/s)	-1.83080E-07	+/-	1.2E-09
Total phase (deg)	-209.0	Apriori accel (us/s/s)	5.91599798048E-05	Resid phase (deg)	150.7	+/-	3.7

	RMS	Theor.	Amplitude	0.846 +/- 0.027	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000
ph/seg (deg)	16.2	8.7	Search (1024X32)	0.822	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	SampCntNorm: enabled	mb window (us)	-0.008	0.008
amp/seg (%)	13.3	15.2	Interp.	0.000	Sample rate(MISamp/s): 128	nlags: 256 t_cohere infinite	dr window (ns/s)	-0.011	0.011
ph/frq (deg)	43.1	5.3	Inc. seg. avg.	0.859	Data rate(Mb/s): 2048	ion window (TEC)	0.00	0.00	
amp/frq (%)	25.8	9.2	Inc. frq. avg.	1.034					

X: az 293.9 el 29.5 pa 38.1 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 9160.523 5155.058 simultaneous interpolator

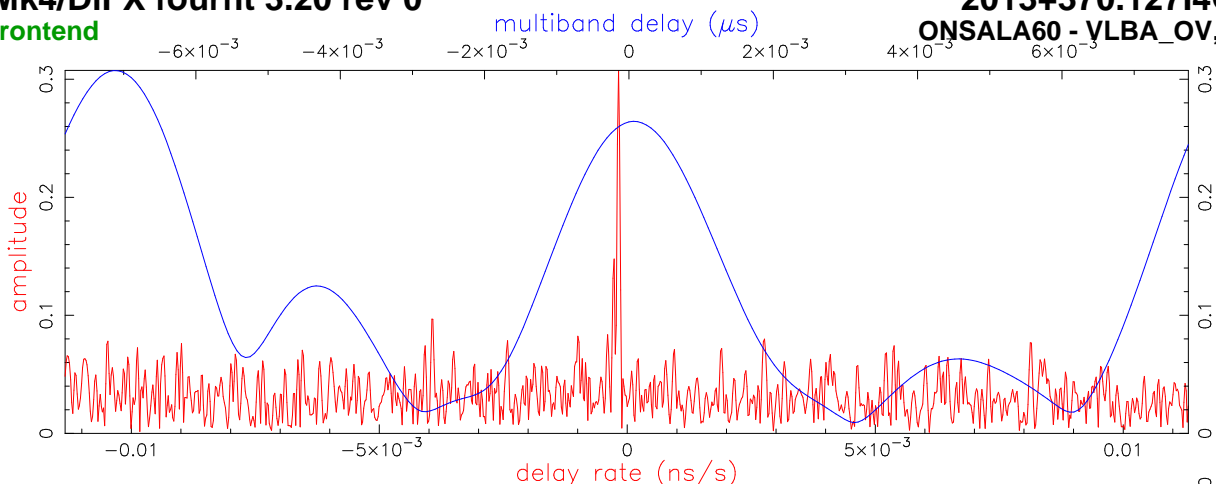
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/Xo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/Xo.W.350.12714G

# Mk4/DiFX fourfit 3.20 rev 0

frontend

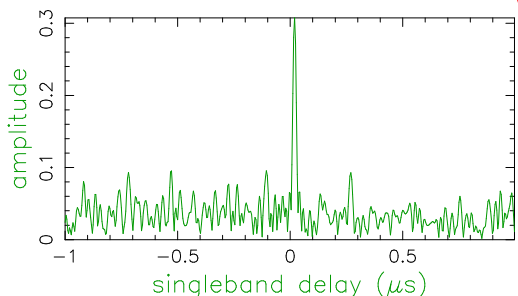
## 2013+370.12714G, No0070, Xo

### ONSALA60 - VLBA\_OV, fgroup W, pol LR

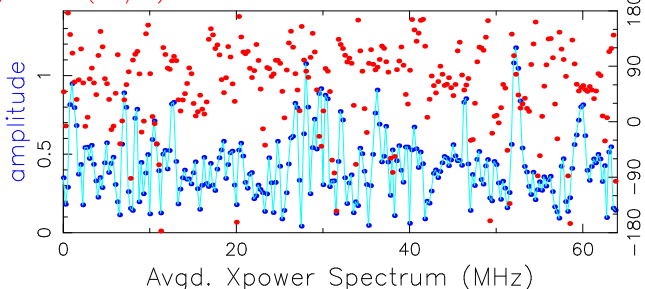


Fringe quality 9

SNR 11.2  
Int time 178.189  
Amp 0.308  
Phase 21.4  
PFD 7.3e-21  
Delays (us)  
SBD 0.019271  
MBD -0.007129  
Fringe rate (Hz)  
-0.015999  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512

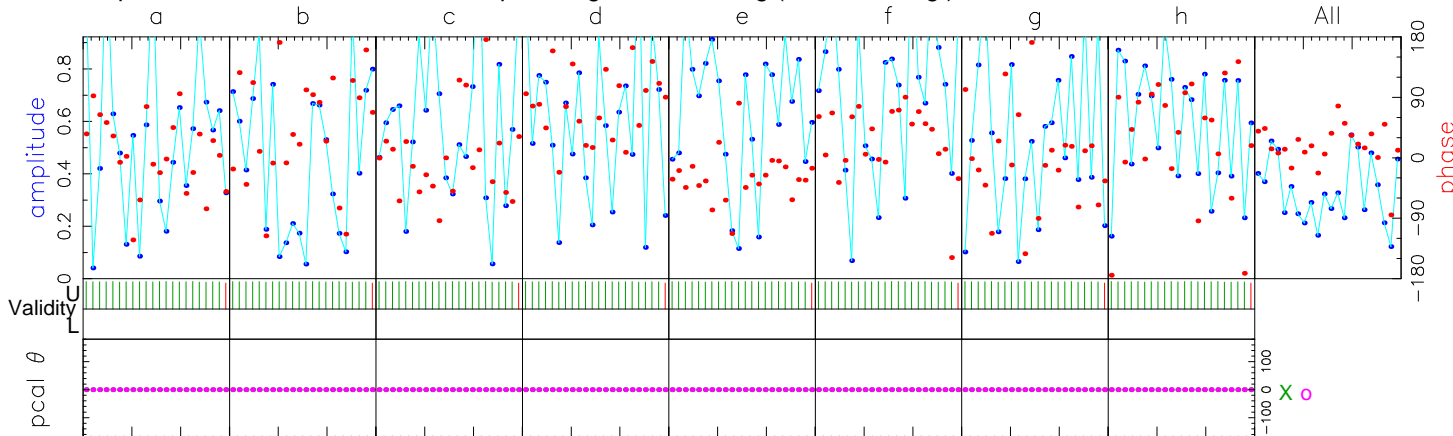


delay rate (ns/s)



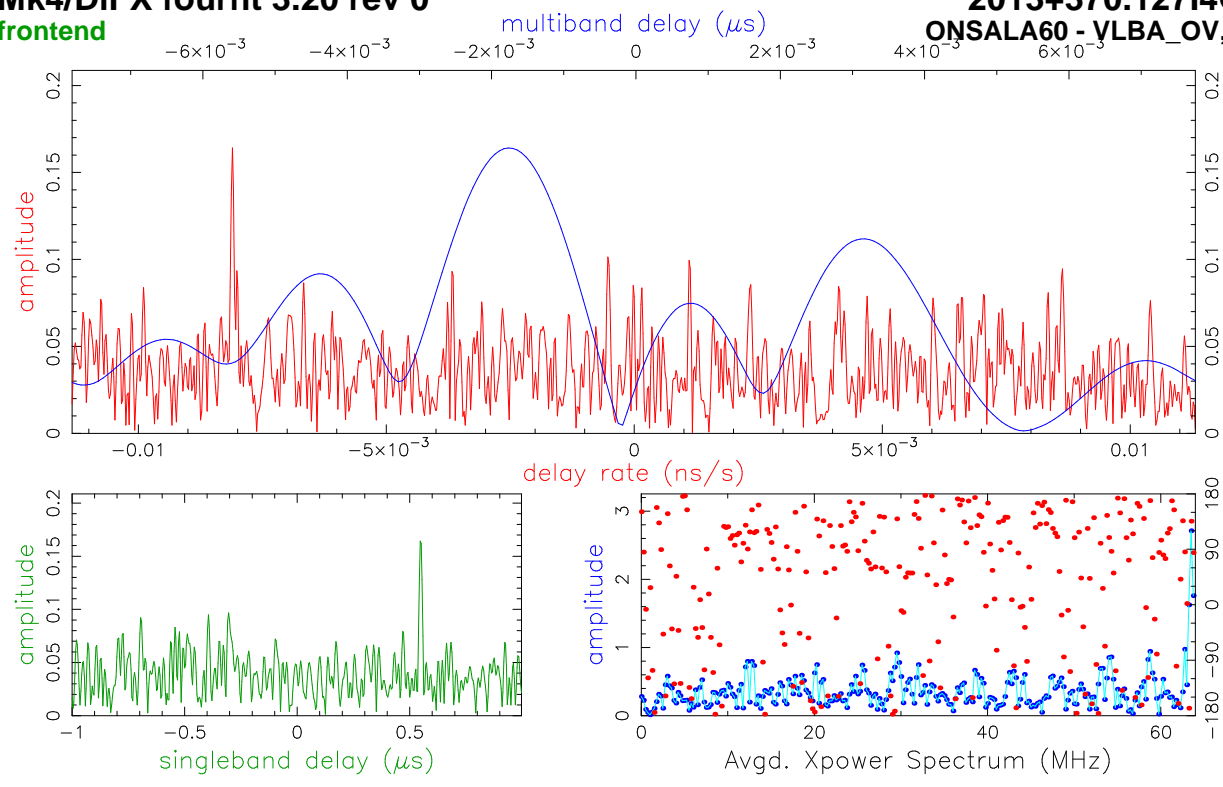
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 004000.00  
Stop 004300.22  
FRT 004130.00  
Corr/FF/build  
2020:070:101629  
2020:071:132546  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



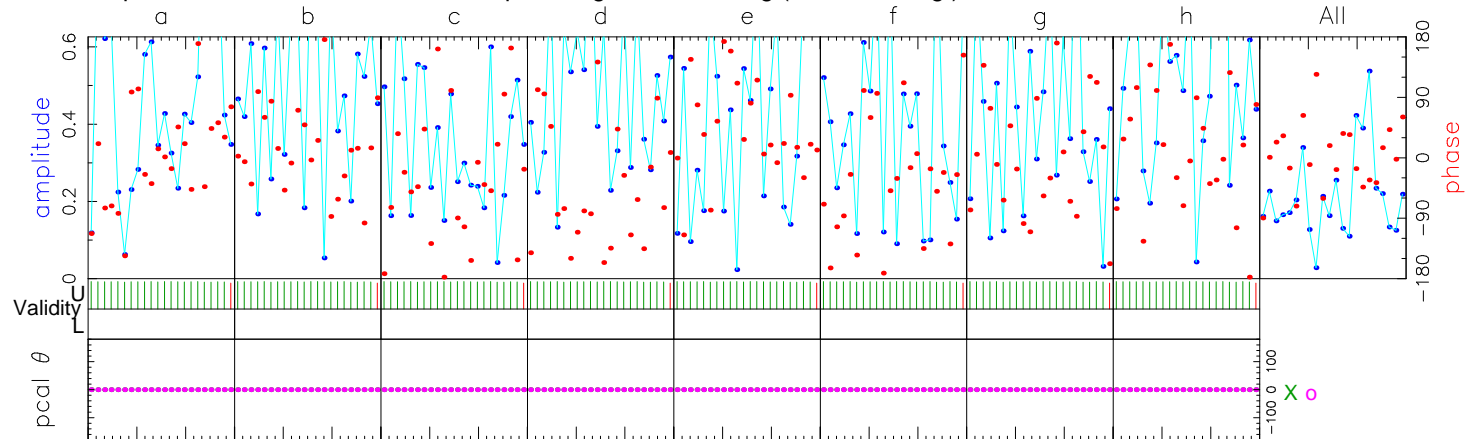
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
X	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
X:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
X:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
X	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)	-8.05869285095E+03	-8.05869770186E+03	-8.05871697167E+03	-8.05871697167E+03	-8.05871697236E+03	-8.05871697236E+03	-8.05871697236E+03	-8.05871697236E+03	-7.12858E-03	+/- 9.7E-05
Sband delay (usec)	-8.05869285095E+03	-8.05869770186E+03	-8.05871697167E+03	-8.05871697167E+03	-8.05871697236E+03	-8.05871697236E+03	-8.05871697236E+03	-8.05871697236E+03	1.92705E-02	+/- 7.7E-04
Phase delay (usec)	-8.05871697167E+03	-8.05871697167E+03	-8.05871697167E+03	-8.05871697167E+03	-8.05871697236E+03	-8.05871697236E+03	-8.05871697236E+03	-8.05871697236E+03	6.91456E-07	+/- 3.3E-07
Delay rate (us/s)	-1.26656335528E+00	-1.26656335528E+00	-1.26656335528E+00	-1.26656335528E+00	-1.26656335528E+00	-1.26656335528E+00	-1.26656335528E+00	-1.26656335528E+00	-1.85736E-07	+/- 3.2E-09
Total phase (deg)			-338.3						21.4	+/- 10.2
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)										
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

ph/seg (deg) 31.8 23.9 Search (1024X32) 0.292 PCal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 40.2 41.8 Interp. 0.000 PCal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 47.2 14.4 Inc. seg. avg. 0.309 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 46.8 25.2 Inc. frq. avg. 0.391 Data rate (Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 X: az 293.9 el 29.5 pa 38.1 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 9160.523 5155.058 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/Xo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/Xo.W.370.12714G

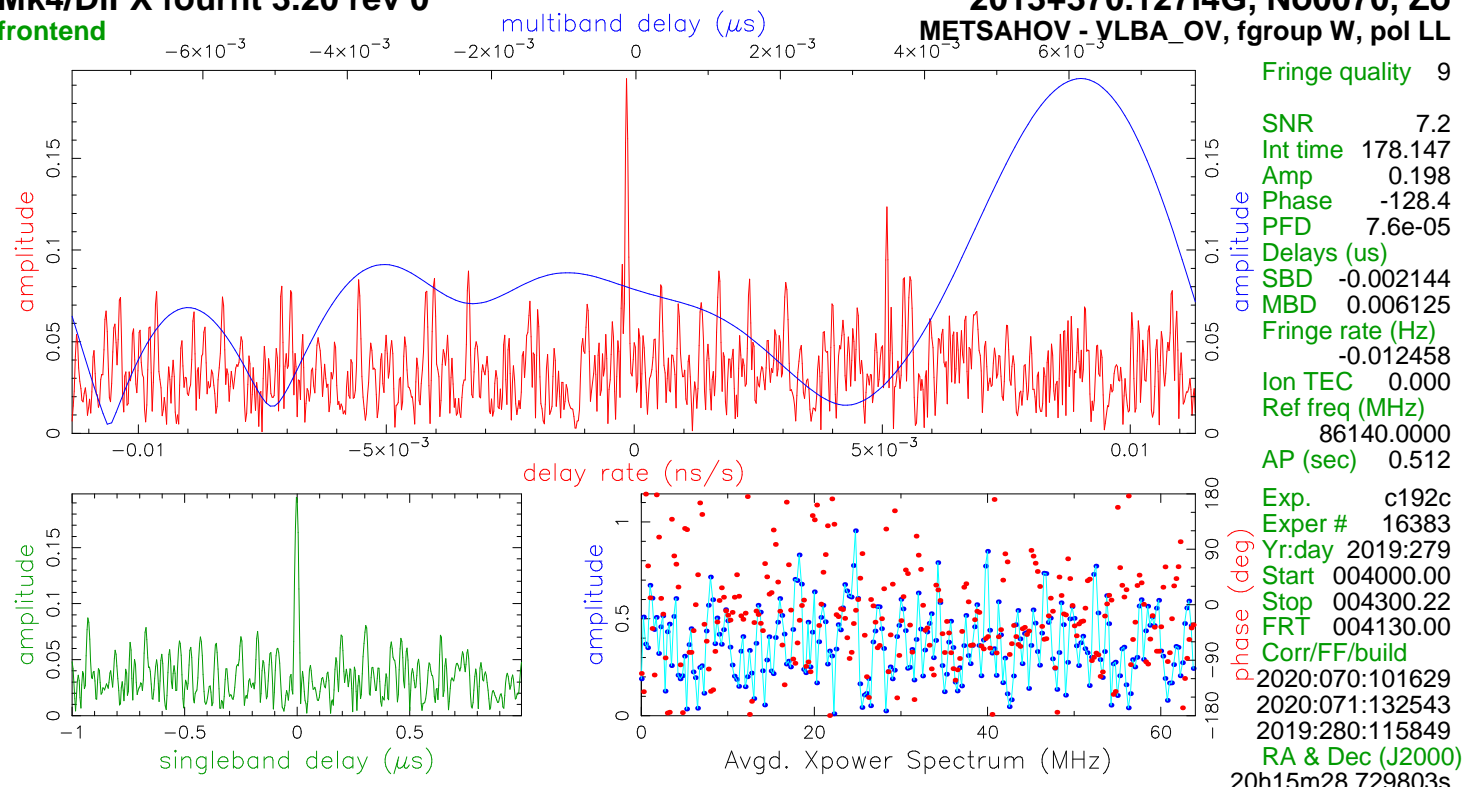


Fringe quality 0  
 SNR 6.1  
 Int time 178.189  
 Amp 0.209  
 Phase -8.2  
 PFD 1.2e-01  
 Delays (us)  
 SBD 0.548553  
 MBD -0.001768  
 Fringe rate (Hz)  
 -0.700066  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132548  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

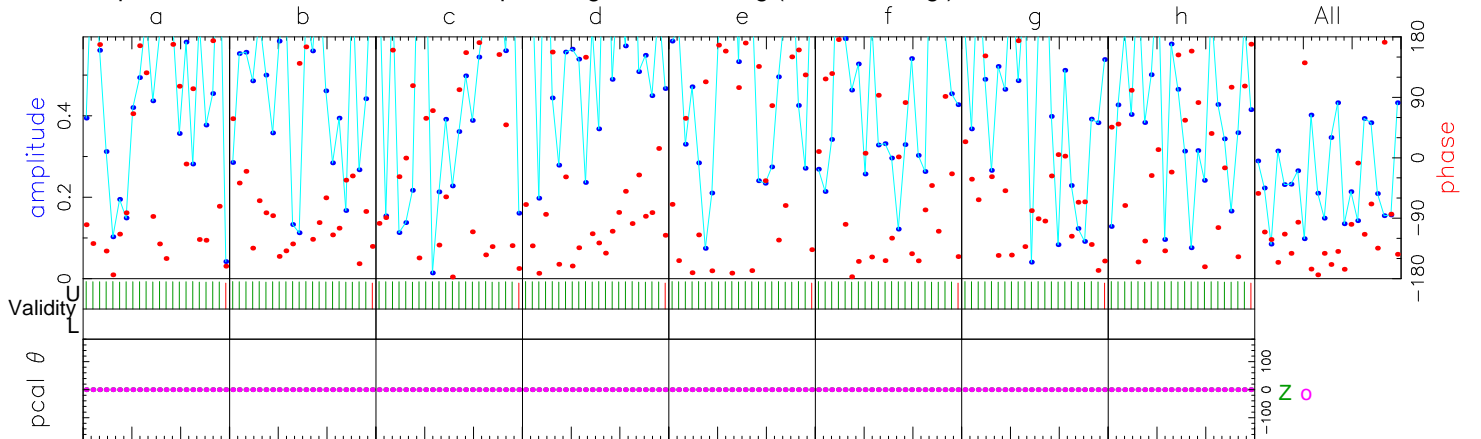
Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All	
	-3.3	3.1	-50.7	-81.0	23.6	-24.3	-25.0	5.9	Phase	-8.2	
	0.3	0.4	0.1	0.2	0.3	0.1	0.2	0.3	Ampl.	0.2	
	396.7	396.2	100.1	201.7	452.8	44.2	224.2	435.8	Sbd box	397.4	
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used		
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs		
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs		
X:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase		
X:o	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		
o	1000	1000	1000	1000	1000	1000	1000	1000	PC amp		
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids		
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks		
									Chan ids		
									Tracks		
Group delay (usec)(sbd)	-8.05817186561E+03		Apriori delay (usec)		-8.05871697236E+03		Resid mbdelay (usec)		-1.76825E-03	+/- 1.8E-04	
Sband delay (usec)	-8.05816841986E+03		Apriori clock (usec)		1.5746180E+01		Resid sbdelay (usec)		5.48553E-01	+/- 1.4E-03	
Phase delay (usec)	-8.05871697263E+03		Apriori clockrate (us/s)		5.2701902E-07		Resid phdelay (usec)		-2.65500E-07	+/- 6.1E-07	
Delay rate (us/s)	-1.26657129663E+00		Apriori rate (us/s)		-1.26656316955E+00		Resid rate (us/s)		-8.12708E-06	+/- 5.8E-09	
Total phase (deg)			Apriori accel (us/s/s)		5.91599798048E-05		Resid phase (deg)		-8.2	+/- 18.8	
	RMS	Theor.	Amplitude	0.209 +/- 0.034		Pcal mode: MANUAL, MANUAL		PC period (AP's) 5, 5			
ph/seg (deg)	49.4	44.0	Search (1024X32)	0.163		Pcal rate: 0.000E+00, 0.000E+00 (us/s)		sb window (us)		-1.000 1.000	
amp/seg (%)	73.9	76.8	Interp.	0.000		Bits/sample: 2x2		SampCntNorm: enabled		mb window (us)	-0.008 0.008
ph/frq (deg)	38.7	26.5	Inc. seg. avg.	0.207		Sample rate(MISamp/s): 128		Data rate(Mb/s): 2048		dr window (ns/s)	-0.011 0.011
amp/frq (%)	53.3	46.3	Inc. frq. avg.	0.211		Data rate(Mb/s): 2048		nlags: 256 t_cohere infinite		ion window (TEC)	0.00 0.00
X: az 293.9 el 29.5 pa 38.1	o: az 78.2 el 60.0 pa -78.1		u,v (fr/asec) 9160.523 5155.058						simultaneous interpolator		
Control file: cf_1234_gmva	Input file: /Exps/c192c/v1_CygA2/1234/No0070/Xo..12714G		Output file: /Exps/c192c/v1_CygA2/1234/No0070/Xo.W.389.12714G								



Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



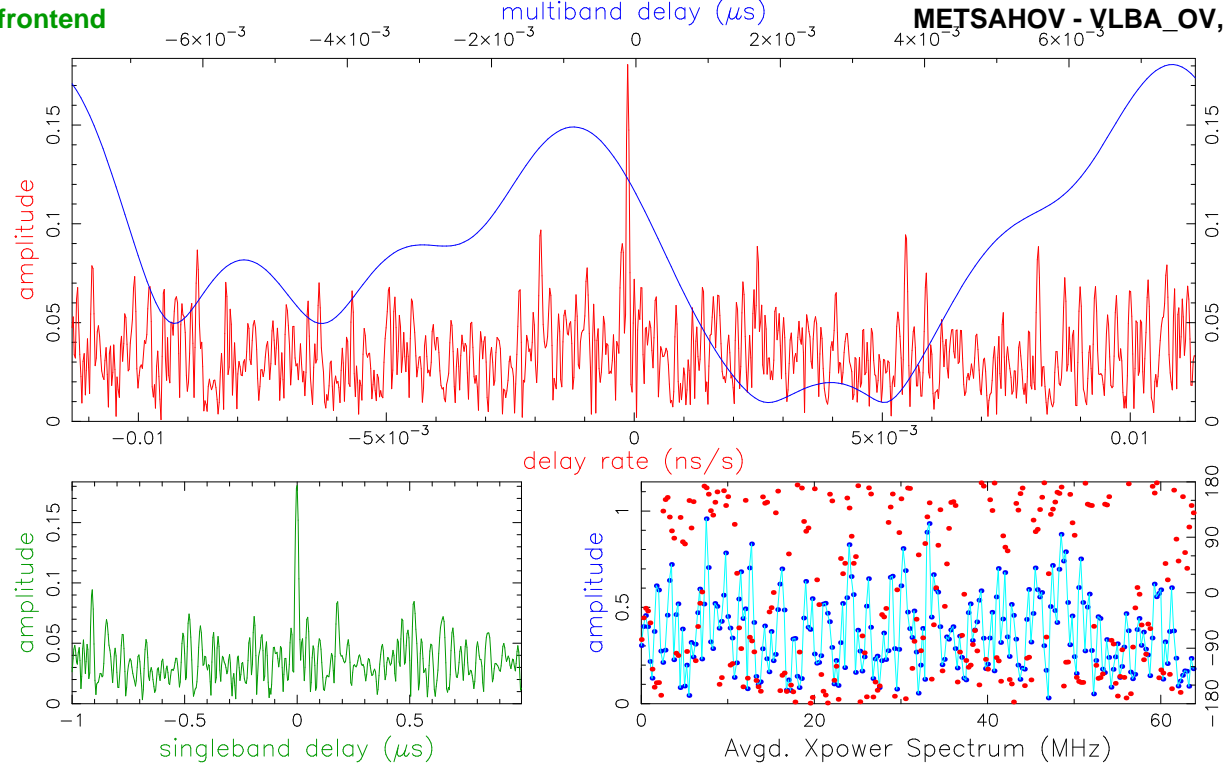
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-146.3	-98.2	-162.4	-101.1	-175.6	-140.1	-100.2	41.3	Phase	-128.4
	0.2	0.3	0.2	0.4	0.3	0.2	0.2	0.0	Ampl.	0.2
	313.2	256.0	39.3	257.5	257.9	501.2	237.1	452.4	Sbd box	256.5
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
Z	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Z:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
Z:o	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	
o	1000	1000	1000	1000	1000	1000	1000	1000		
Z	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Chan ids	
									Tracks	

Group delay (usec)(sbd)	-9.53875740554E+03	Apriori delay (usec)	-9.53874790582E+03	Resid mbdelay (usec)	6.12528E-03	+/-	1.5E-04
Sband delay (usec)	-9.5387500532E+03	Apriori clock (usec)	-1.6485584E+01	Resid sbdelay (usec)	-2.14450E-03	+/-	1.2E-03
Phase delay (usec)	-9.53874790996E+03	Apriori clockrate (us/s)	1.5311808E-08	Resid phdelay (usec)	-4.14164E-06	+/-	5.1E-07
Delay rate (us/s)	-1.19395655081E+00	Apriori rate (us/s)	-1.19395640618E+00	Resid rate (us/s)	-1.44624E-07	+/-	4.9E-09
Total phase (deg)	-347.1	Apriori accel (us/s/s)	6.86065396406E-05	Resid phase (deg)	-128.4	+/-	15.9

ph/seg (deg)	46.5	Theor.	37.2	Amplitude	0.198 +/- 0.027	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5		
amp/seg (%)	59.9		64.9	Search (1024X32)	0.185	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000		
ph/frq (deg)	76.5		22.4	Inc. seg. avg.	0.206	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008	
amp/frq (%)	55.8		39.1	Inc. frq. avg.	0.219	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

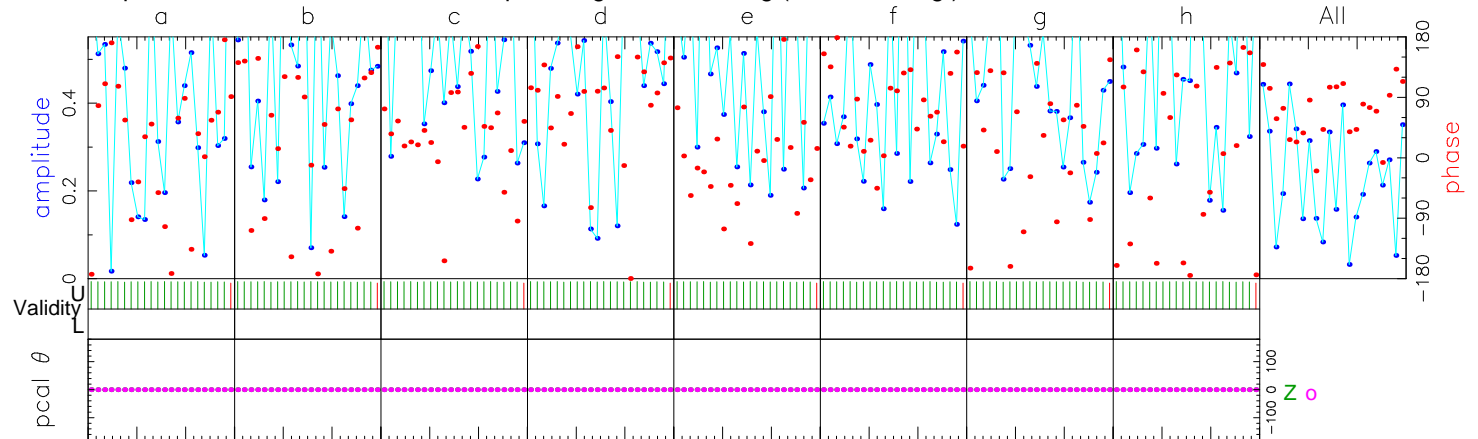
Z: az 301.7 el 25.1 pa 32.1 o: az 78.2 el 60.0 pa -78.1 u,v (fr/asec) 8645.637 5902.843 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0070/Zo..12714G Output file: /Exps/c192c/v1\_CygA2/1234/No0070/Zo.W.343.12714G

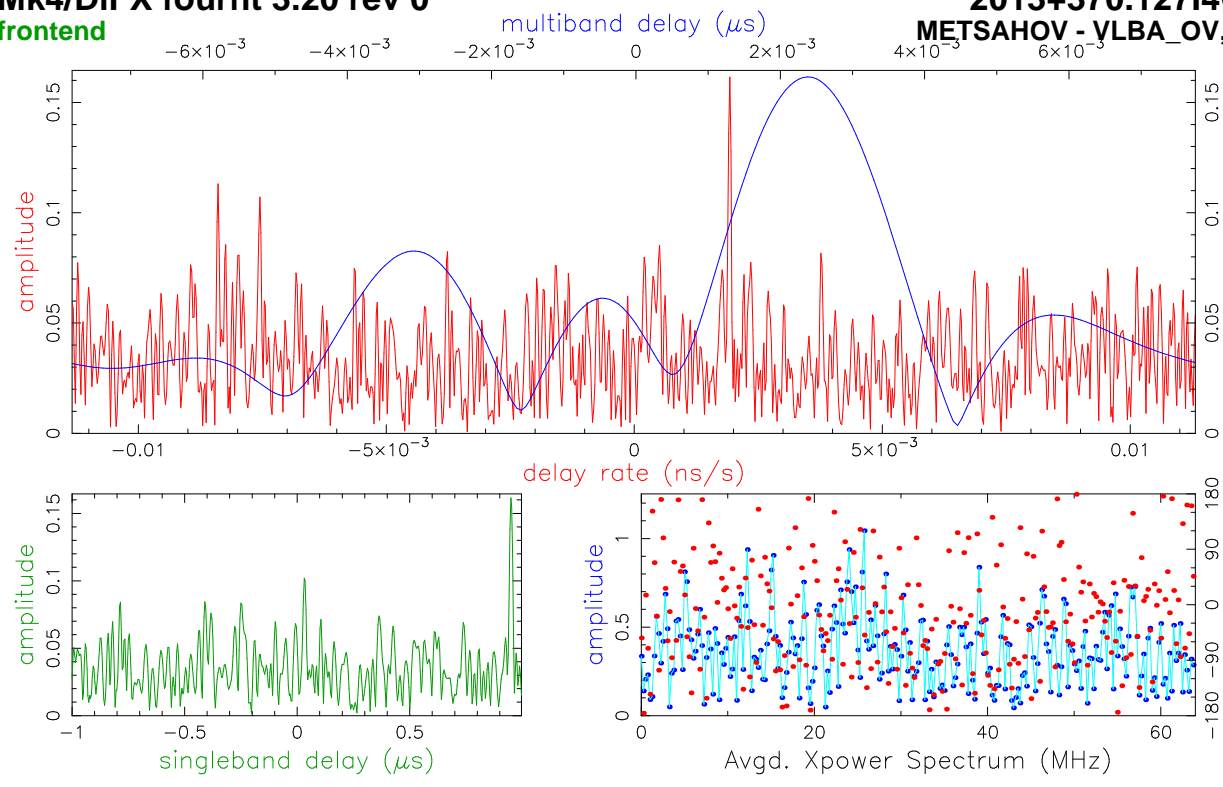


Fringe quality 0  
 SNR 6.7  
 Int time 178.147  
 Amp 0.184  
 Phase 78.3  
 PFD 2.9e-03  
 Delays (us)  
 SBD -0.001703  
 MBD 0.007417  
 Fringe rate (Hz)  
 -0.012345  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132545  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec

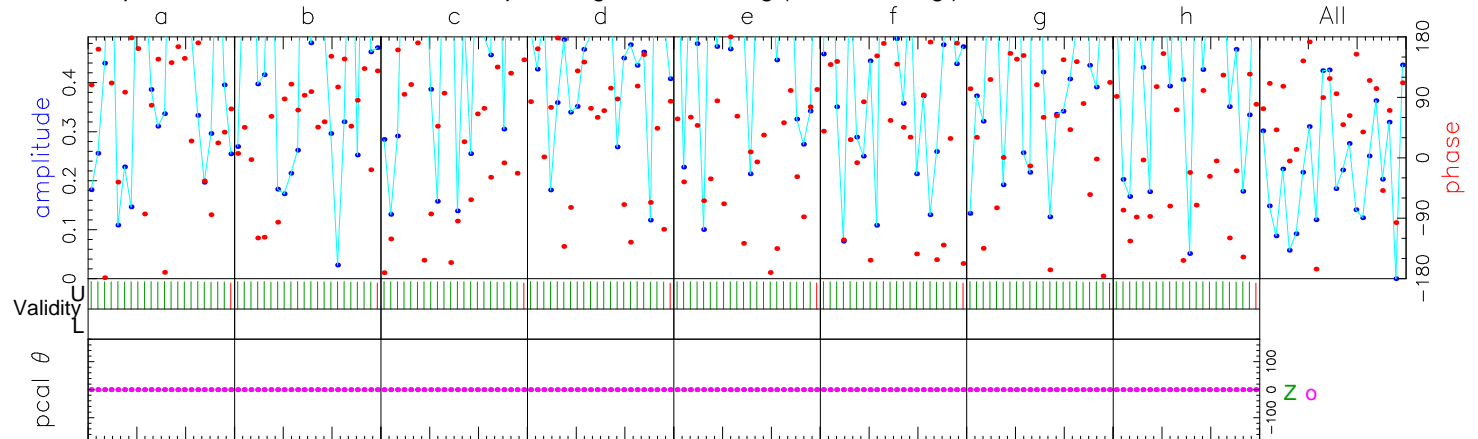


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All		
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0				
Z	1000	1000	1000	1000	1000	1000	1000	1000				
o	1000	1000	1000	1000	1000	1000	1000	1000				
Z:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0				
Z:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0				
Z	1000	1000	1000	1000	1000	1000	1000	1000				
o	1000	1000	1000	1000	1000	1000	1000	1000				
Z	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR				
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR				
Group delay (usec)(sbd)	-9.53875611381E+03		Apriori delay (usec)		-9.53874790582E+03		Resid mbdelay (usec)		7.41701E-03	+/- 1.6E-04		
Sband delay (usec)	-9.53874960857E+03		Apriori clock (usec)		-1.6485584E+01		Resid sbdelay (usec)		-1.70275E-03	+/- 1.3E-03		
Phase delay (usec)	-9.53874790330E+03		Apriori clockrate (us/s)		1.5311808E-08		Resid phdelay (usec)		2.52370E-06	+/- 5.5E-07		
Delay rate (us/s)	-1.19395654950E+00		Apriori rate (us/s)		-1.19395640618E+00		Resid rate (us/s)		-1.43317E-07	+/- 5.3E-09		
Total phase (deg)			Apriori accel (us/s/s)		6.86065396406E-05		Resid phase (deg)		78.3	+/- 17.1		
ph/seg (deg)	RMS 42.6	Theor. 40.1	Amplitude Search (1024X32)		0.184 +/- 0.027		Pcal mode: MANUAL, MANUAL		PC period (AP's) 5, 5			
amp/seg (%)	72.6	69.9	Interp.		0.000		Pcal rate: 0.000E+00, 0.000E+00 (us/s)		sb window (us)	-1.000 1.000		
ph/frq (deg)	54.6	24.2	Inc. seg. avg.		0.190		Bits/sample: 2x2		SampCntNorm: enabled	mb window (us)	-0.008 0.008	
amp/frq (%)	59.3	42.2	Inc. frq. avg.		0.246		Sample rate(MISamp/s): 128			dr window (ns/s)	-0.011 0.011	
Z: az 301.7 el 25.1 pa 32.1	o: az 78.2 el 60.0 pa -78.1		u,v (fr/asec)		8645.637 5902.843		Data rate(Mb/s): 2048		nlags: 256	t_cohere infinite	ion window (TEC)	0.00 0.00
Control file: cf_1234_gmva	Input file: /Exps/c192c/v1_CygA2/1234/No0070/Zo..12714G		Output file: /Exps/c192c/v1_CygA2/1234/No0070/Zo.W.363.12714G								simultaneous interpolator	



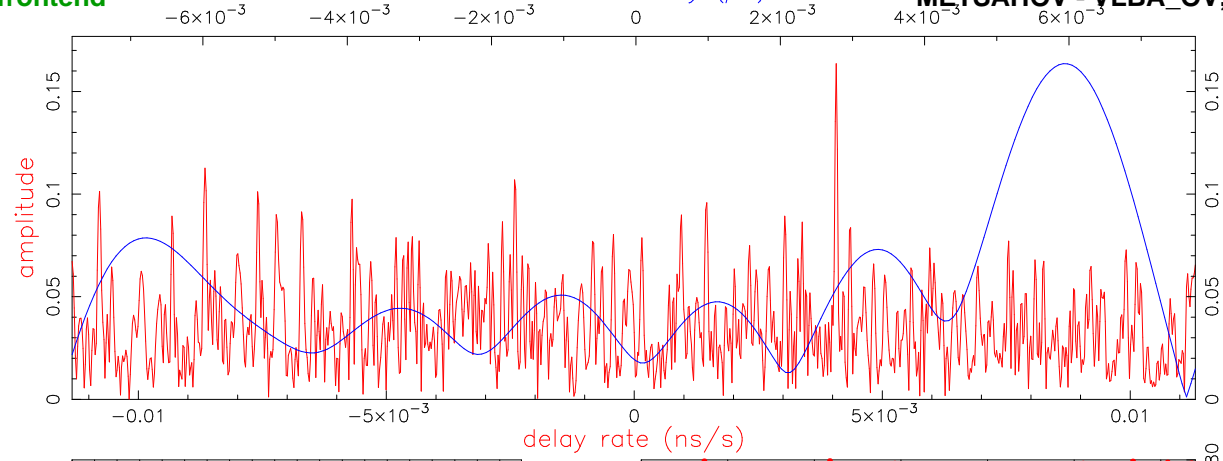
Fringe quality 0  
 SNR 5.9  
 Int time 178.147  
 Amp 0.165  
 Phase 97.9  
 PFD 3.2e-01  
 Delays (us)  
 SBD 0.950270  
 MBD 0.002429  
 Fringe rate (Hz)  
 0.165554  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132548  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec

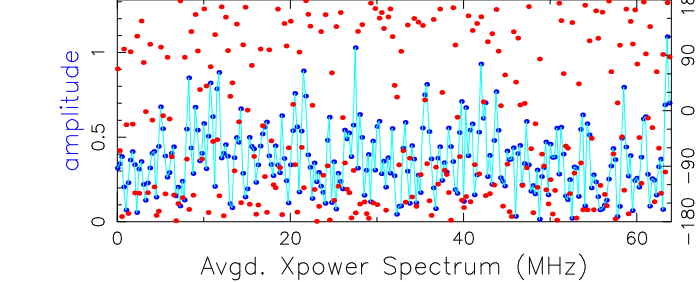
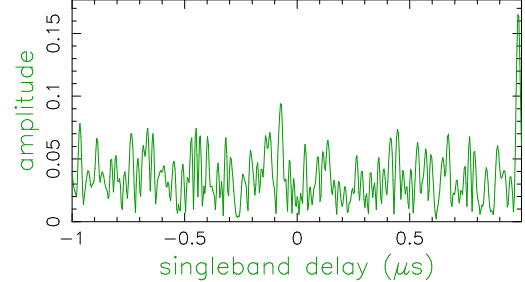


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
132.9	70.3	121.4	97.5	48.4	121.4	109.9	69.6	69.6	Phase	97.9
0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.1	Ampl.	0.2
262.0	498.3	117.5	283.1	246.2	348.1	56.6	22.6	22.6	Sbd box	500.3
U/L 352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
Z 1000	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o 1000	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Z:o 0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
Z:o 0:0	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	1000	PC amp	
o 1000	1000	1000	1000	1000	1000	1000	1000	1000		
Z W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		Chan ids	
o W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-9.53779235141E+03		Apriori delay (usec)	-9.53874790582E+03		Resid mbdelay (usec)	2.42941E-03	+/-	1.8E-04	
Sband delay (usec)	-9.53779763582E+03		Apriori clock (usec)	-1.6485584E+01		Resid sbdelay (usec)	9.50270E-01	+/-	1.5E-03	
Phase delay (usec)	-9.53874790266E+03		Apriori clockrate (us/s)	1.5311808E-08		Resid phdelay (usec)	3.15713E-06	+/-	6.2E-07	
Delay rate (us/s)	-1.19395448427E+00		Apriori rate (us/s)	-1.19395640618E+00		Resid rate (us/s)	1.92191E-06	+/-	6.0E-09	
Total phase (deg)		-120.8	Apriori accel (us/s/s)	6.86065396406E-05		Resid phase (deg)	97.9	+/-	19.3	
	RMS	Theor.	Amplitude	0.165 +/- 0.028		Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5			
ph/seg (deg)	67.3	45.3	Search (1024X32)	0.155		Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000	1.000	
amp/seg (%)	83.0	79.0	Interp.	0.000		Bits/sample: 2x2	SampCntNorm: enabled	mb window (us)	-0.008	0.008
ph/frq (deg)	32.9	27.3	Inc. seg. avg.	0.172		Sample rate(MISamp/s): 128	dr window (ns/s)	-0.011	0.011	
amp/frq (%)	39.0	47.7	Inc. frq. avg.	0.166		Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00
Z: az 301.7 el 25.1 pa 32.1			o: az 78.2 el 60.0 pa -78.1			u,v (fr/asec) 8645.637 5902.843				simultaneous interpolator
Control file: cf_1234_gmva			Input file: /Exps/c192c/v1_CygA2/1234/No0070/Zo..12714G			Output file: /Exps/c192c/v1_CygA2/1234/No0070/Zo.W.384.12714G				

multiband delay ( $\mu$ s)

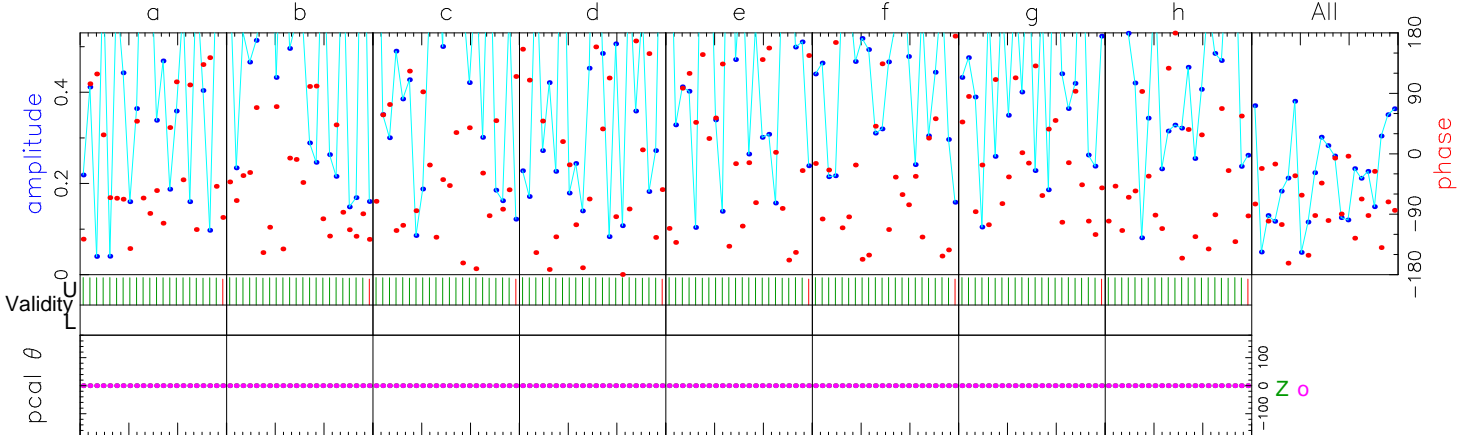


Fringe quality 0  
 SNR 6.1  
 Int time 178.147  
 Amp 0.177  
 Phase -77.8  
 PFD 1.2e-01  
 Delays (us)  
 SBD 0.982203  
 MBD 0.005950  
 Fringe rate (Hz) 0.351807  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 004000.00  
 Stop 004300.22  
 FRT 004130.00  
 Corr/FF/build  
 2020:070:101629  
 2020:071:132550  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



Avgd. Xpower Spectrum (MHz)

Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 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	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
Z	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
Z:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
Z:o	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		
o	1000	1000	1000	1000	1000	1000	1000	1000		
Z	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		

Group delay (usec)(sbd)	-9.53777320534E+03	Apriori delay (usec)	-9.53874790582E+03	Resid mbdelay (usec)	5.95048E-03	+/-	1.8E-04
Sband delay (usec)	-9.53776570282E+03	Apriori clock (usec)	-1.6485584E+01	Resid sbdelay (usec)	9.82203E-01	+/-	1.4E-03
Phase delay (usec)	-9.53874790833E+03	Apriori clockrate (us/s)	1.5311808E-08	Resid phdelay (usec)	-2.50795E-06	+/-	6.0E-07
Delay rate (us/s)	-1.19395232205E+00	Apriori rate (us/s)	-1.19395640618E+00	Resid rate (us/s)	4.08414E-06	+/-	5.8E-09
Total phase (deg)	-296.4	Apriori accel (us/s/s)	6.86065396406E-05	Resid phase (deg)	-77.8	+/-	18.7

ph/seg (deg)	45.2	Theor.	43.9	Amplitude	0.177 +/- 0.029	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
amp/seg (%)	66.2	Search (1024X32)	0.157	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		sb window (us)	-1.000 1.000
ph/frq (deg)	33.9	Interp.	0.000	Bits/sample: 2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008
amp/frq (%)	30.2	Inc. seg. avg.	0.176	Sample rate(MISamp/s): 128		dr window (ns/s)	-0.011 0.011
		Inc. frq. avg.	0.173	Data rate(Mb/s): 2048	nlags: 256 t_cohere infinite	ion window (TEC)	0.00 0.00