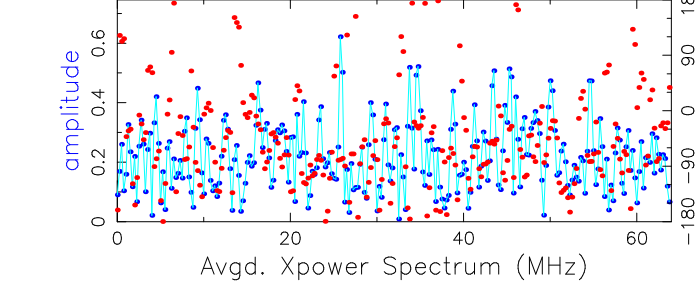
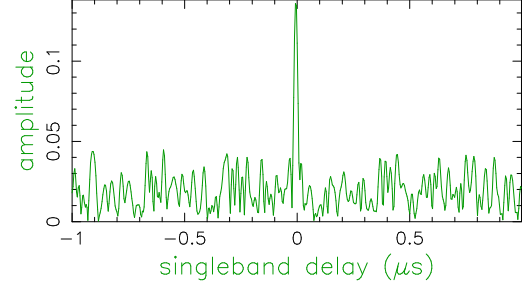
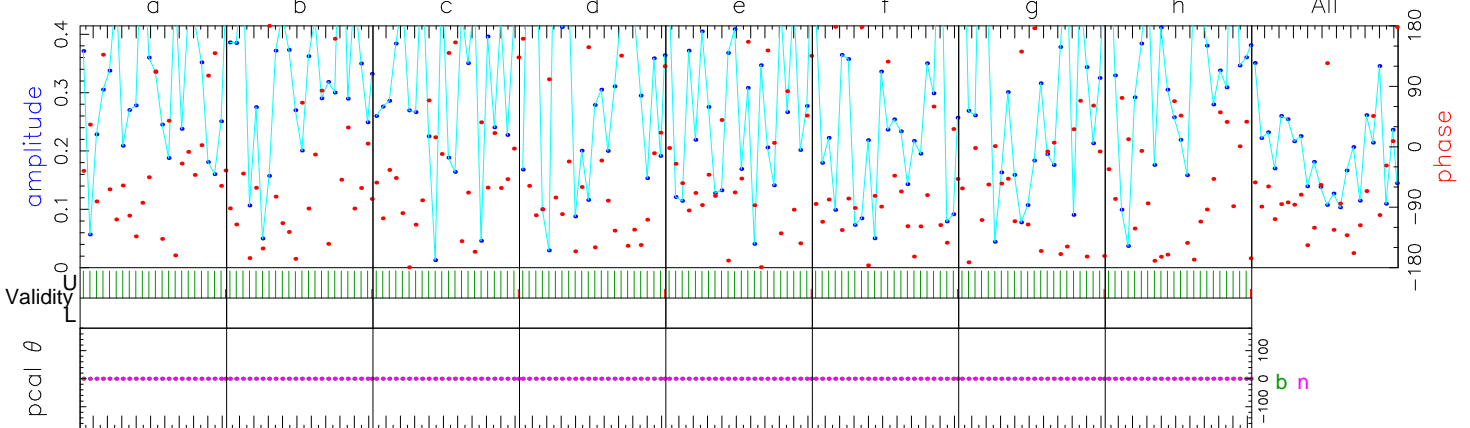


Fringe quality 9  
 SNR 9.1  
 Int time 582.329  
 Amp 0.138  
 Phase -84.6  
 PFD 6.0e-11  
 Delays (us)  
 SBD -0.006074  
 MBD -0.004308  
 Fringe rate (Hz)  
 -0.008728  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091505.63  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145135  
 2019:280:115849  
 RA & Dec (J2000)  
 22h53m57.747940s  
 +16°08'53.560909"



Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec

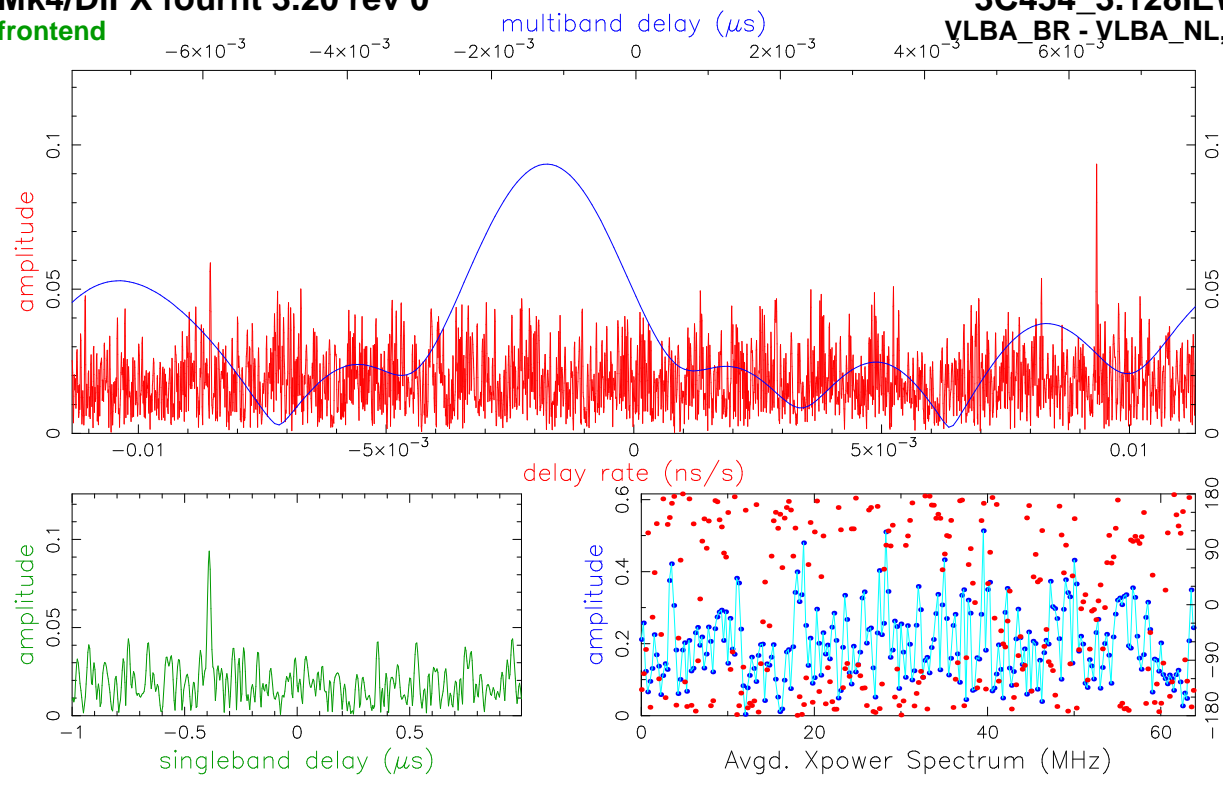


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-68.1	-80.5	-73.1	-93.9	-91.1	-101.9	-95.1	-74.0	Phase	-84.6
	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	Ampl.	0.1
	499.9	255.1	256.0	254.2	200.7	256.9	3.1	103.0	Sbd box	255.4
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	APs used	
b	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
b:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
b:n	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	
n	1000	1000	1000	1000	1000	1000	1000	1000		
b	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	6.17743790740E+03		Apriori delay (usec)		6.17744221496E+03		Resid mbdelay (usec)		-4.30756E-03	+/- 1.2E-04
Sband delay (usec)	6.17743614121E+03		Apriori clock (usec)		-2.7173145E+01		Resid sbdelay (usec)		-6.07375E-03	+/- 9.4E-04
Phase delay (usec)	6.17744221223E+03		Apriori clockrate (us/s)		-3.7661858E-07		Resid phdelay (usec)		-2.72760E-06	+/- 4.1E-07
Delay rate (us/s)	3.16056796918E-01		Apriori rate (us/s)		3.16056898245E-01		Resid rate (us/s)		-1.01327E-07	+/- 1.2E-09
Total phase (deg)			Apriori accel (us/s/s)		-3.05096558210E-05		Resid phase (deg)		-84.6	+/- 12.6

ph/seg (deg) 57.5 30.1 Amplitude 0.138 +/- 0.015 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 66.6 52.6 Search (4096X32) 0.134 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 13.4 17.8 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 20.5 31.0 Inc. seg. avg. 0.174 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 b: az 249.5 el 38.4 pa 40.6 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -1950.221 -15.053 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/bn..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/bn.W.28.128IEW simultaneous interpolator

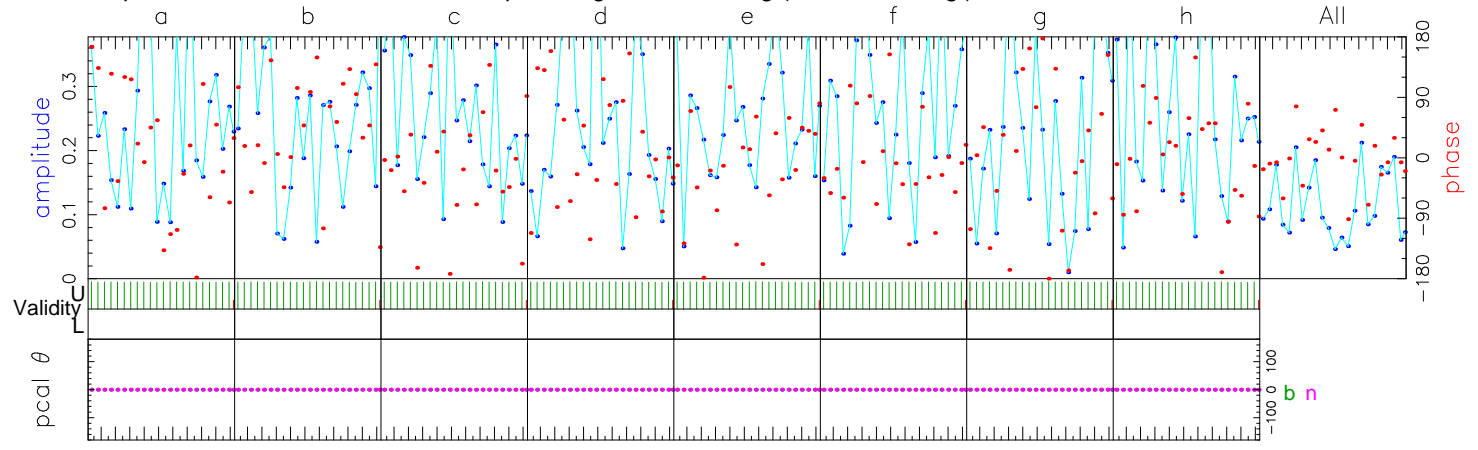
Mk4/DiFX fourfit 3.20 rev 0  
 frontend

3C454\_3.128IEW, No0117, bn  
 VLBA\_BR - VLBA\_NL, fgroup W, pol LR



Fringe quality 0  
 SNR 6.2  
 Int time 582.329  
 Amp 0.126  
 Phase 8.2  
 PFD 3.1e-01  
 Delays (us)  
 SBD -0.391067  
 MBD -0.001254  
 Fringe rate (Hz) 0.805520  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091505.63  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145143  
 2019:280:115849  
 RA & Dec (J2000)  
 22h53m57.747940s  
 +16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec

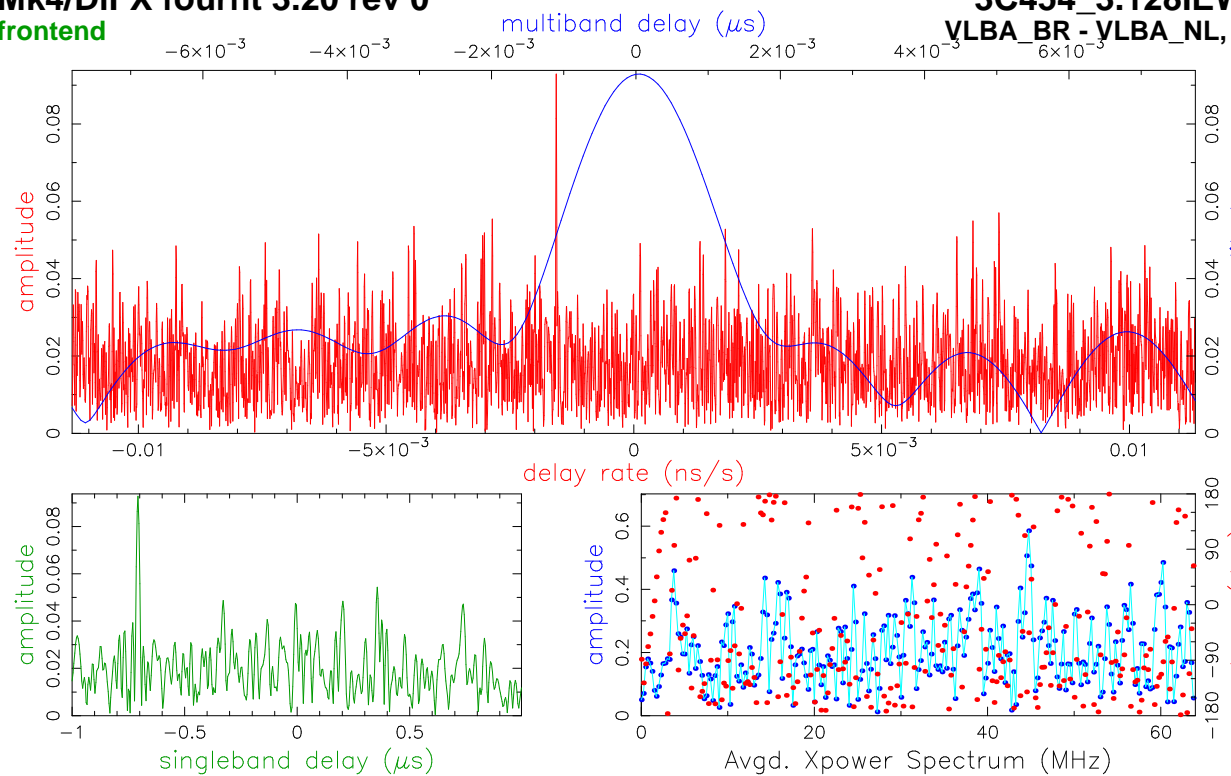


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	7.7	56.2	-15.8	-22.0	11.7	-13.0	117.5	23.7	Phase	8.2
	0.1	0.1	0.2	0.1	0.2	0.2	0.0	0.2	Ampl.	0.1
	50.0	347.5	24.6	195.2	87.2	157.3	320.0	156.9	Sbd box	156.9
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	APs used	
b	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
b:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
b:n	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	
n	1000	1000	1000	1000	1000	1000	1000	1000		
b	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	6.17705033618E+03		Apriori delay (usec)		6.17744221496E+03		Resid mbdelay (usec)		-1.25378E-03	+/- 1.8E-04
Sband delay (usec)	6.17705114771E+03		Apriori clock (usec)		-2.7173145E+01		Resid sbdelay (usec)		-3.91067E-01	+/- 1.4E-03
Phase delay (usec)	6.17744221523E+03		Apriori clockrate (us/s)		-3.7661858E-07		Resid phdelay (usec)		2.65147E-01	+/- 6.0E-07
Delay rate (us/s)	3.16066249532E-01		Apriori rate (us/s)		3.16056898245E-01		Resid rate (us/s)		9.35129E-06	+/- 1.7E-09
Total phase (deg)	151.0		Apriori accel (us/s/s)		-3.05096558210E-05		Resid phase (deg)		8.2	+/- 18.6

ph/seg (deg) 41.8 44.5 Amplitude 0.126 +/- 0.020 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 61.1 77.7 Search (4096X32) 0.092 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 52.3 26.3 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 48.1 45.8 Inc. seg. avg. 0.121 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 Inc. frq. avg. 0.131 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00  
 b: az 249.5 el 38.4 pa 40.6 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -1950.221 -15.053 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/bn..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/bn.W.49.128IEW

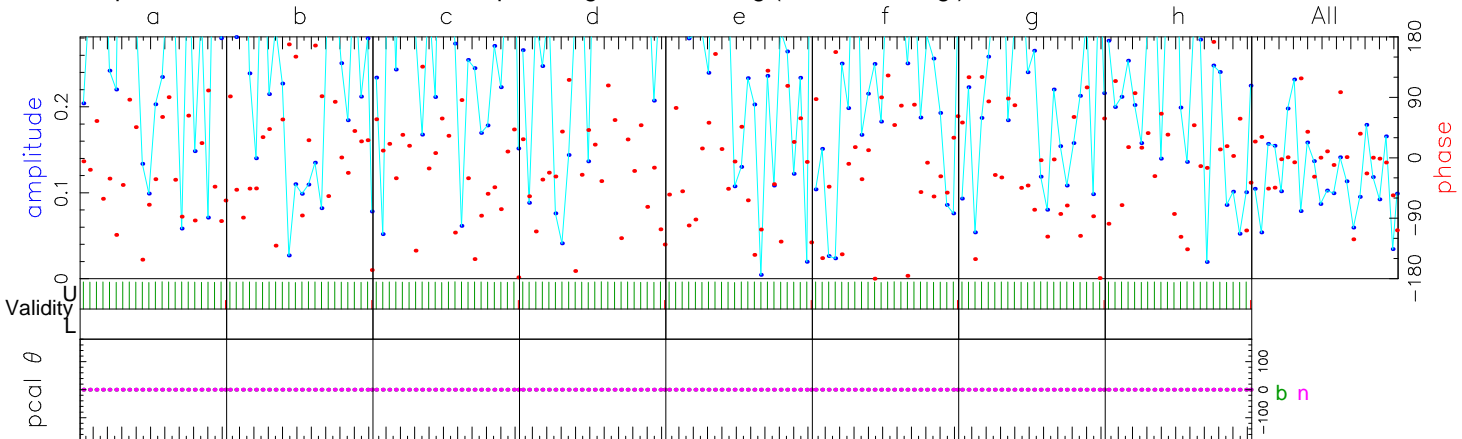
Mk4/DiFX fourfit 3.20 rev 0  
frontend

3C454\_3.128IEW, No0117, bn  
VLBA\_BR - VLBA\_NL, fgroup W, pol RL



Fringe quality 0  
SNR 6.1  
Int time 582.330  
Amp 0.094  
Phase -2.2  
PFD 3.5e-01  
Delays (us)  
SBD -0.707632  
MBD 0.000016  
Fringe rate (Hz)  
-0.135154  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 091505.63  
Stop 092500.06  
FRT 092000.00  
Corr/FF/build  
2020:070:232021  
2020:071:145152  
2019:280:115849  
RA & Dec (J2000)  
22h53m57.747940s  
+16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec

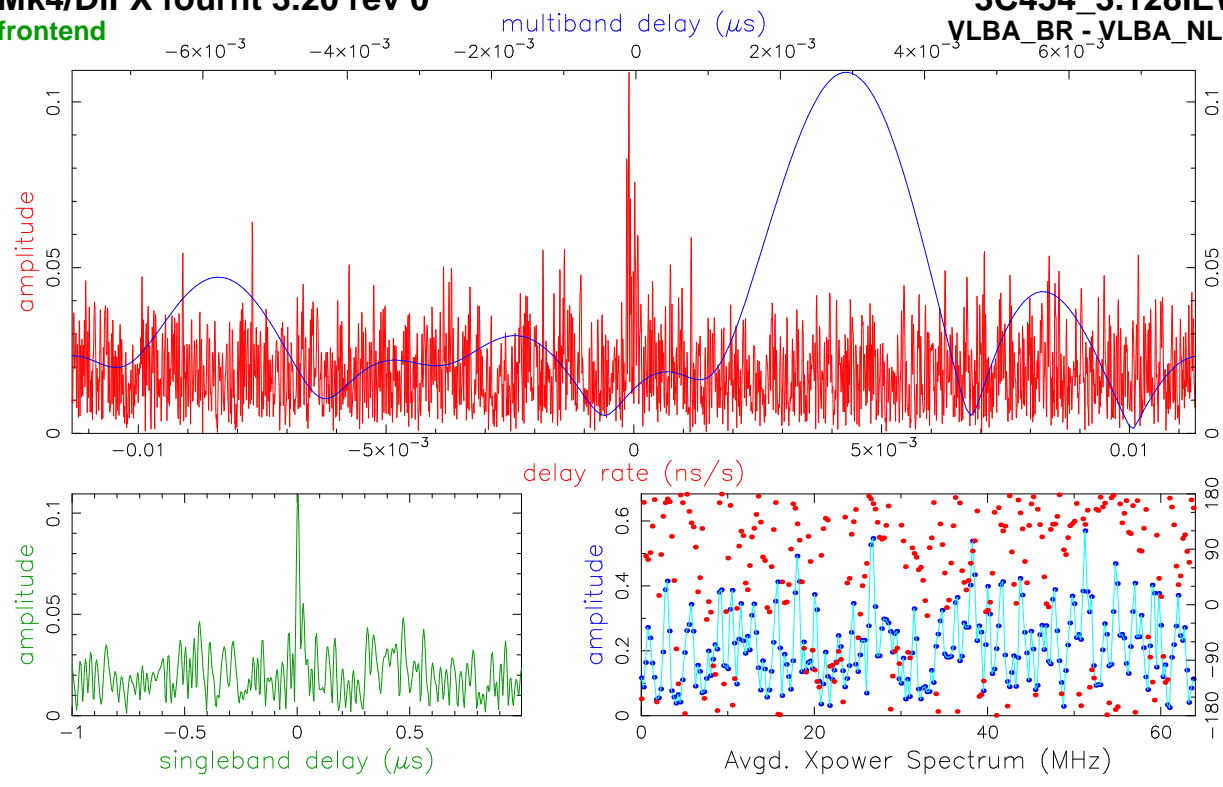


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-10.8	6.9	7.4	-16.4	-30.7	37.4	-4.3	-9.0	Phase	-2.2
	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	Ampl.	0.1
	50.1	82.4	167.3	70.0	307.9	132.7	409.0	239.7	Sbd box	75.8
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	APs used	
b	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
b:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
b:n	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	
n	1000	1000	1000	1000	1000	1000	1000	1000		
b	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	6.17673910609E+03		Apriori delay (usec)		6.17744221496E+03		Resid mbdelay (usec)		1.61260E-05	+/- 1.8E-04
Sband delay (usec)	6.17673458321E+03		Apriori clock (usec)		-2.7173145E+01		Resid sbdelay (usec)		-7.07632E-01	+/- 1.4E-03
Phase delay (usec)	6.17744221489E+03		Apriori clockrate (us/s)		-3.7661858E-07		Resid phdelay (usec)		-7.15023E-08	+/- 6.0E-07
Delay rate (us/s)	3.16055329243E-01		Apriori rate (us/s)		3.16056898245E-01		Resid rate (us/s)		-1.56900E-06	+/- 1.8E-09
Total phase (deg)	140.6		Apriori accel (us/s/s)		-3.05096558210E-05		Resid phase (deg)		-2.2	+/- 18.7

ph/seg (deg) 49.8 44.7 Search (4096X32) 0.094 +/- 0.015 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 58.8 78.1 Interp. 0.090 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 21.9 26.4 Inc. seg. avg. 0.093 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 41.2 46.0 Inc. frq. avg. 0.088 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 249.5 el 38.4 pa 40.6 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -1950.221 -15.053 ion window (TEC) 0.00 0.00 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/bn..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/bn.W.68.128IEW

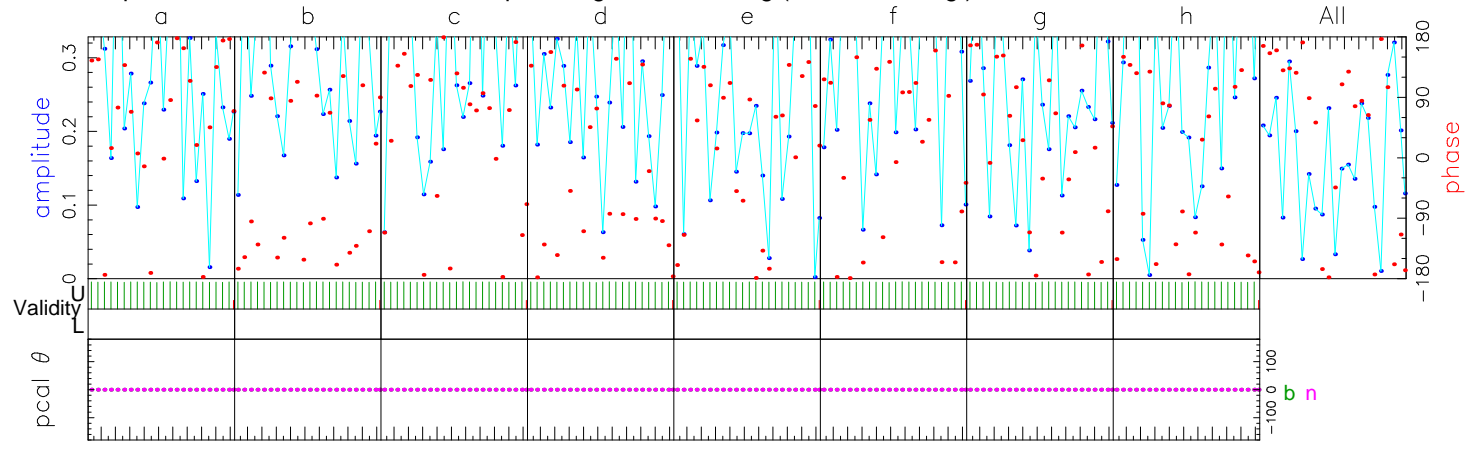
Mk4/DiFX fourfit 3.20 rev 0  
frontend

3C454\_3.128IEW, No0117, bn  
VLBA\_BR - VLBA\_NL, fgroup W, pol LL



Fringe quality 0  
SNR 7.2  
Int time 582.329  
Amp 0.109  
Phase 138.8  
PFD 3.1e-04  
Delays (us)  
SBD 0.002991  
MBD 0.002872  
Fringe rate (Hz) -0.008541  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 091505.63  
Stop 092500.06  
FRT 092000.00  
Corr/FF/build  
2020:070:232021  
2020:071:145127  
2019:280:115849  
RA & Dec (J2000)  
22h53m57.747940s  
+16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0		
b	1000	1000	1000	1000	1000	1000	1000	1000		
n	1000	1000	1000	1000	1000	1000	1000	1000		
b:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
b:n	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		
n	1000	1000	1000	1000	1000	1000	1000	1000		
b	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	6.17744508694E+03		Apriori delay (usec)		6.17744221496E+03		Resid mbdelay (usec)		2.87198E-03	+/- 1.5E-04
Sband delay (usec)	6.17744520621E+03		Apriori clock (usec)		-2.7173145E+01		Resid sbdelay (usec)		2.99125E-03	+/- 1.2E-03
Phase delay (usec)	6.17744221944E+03		Apriori clockrate (us/s)		-3.7661858E-07		Resid phdelay (usec)		4.47542E-06	+/- 5.1E-07
Delay rate (us/s)	3.16056799087E-01		Apriori rate (us/s)		3.16056898245E-01		Resid rate (us/s)		-9.91577E-08	+/- 1.5E-09
Total phase (deg)	281.6		Apriori accel (us/s/s)		-3.05096558210E-05		Resid phase (deg)		138.8	+/- 15.9

ph/seg (deg) 61.3 38.0 Amplitude 0.109 +/- 0.015 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 93.0 66.4 Interp. 0.108 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 27.0 22.4 Inc. seg. avg. 0.135 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 22.9 39.1 Inc. frq. avg. 0.110 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 249.5 el 38.4 pa 40.6 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -1950.221 -15.053 ion window (TEC) 0.00 0.00  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/bn..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/bn.W.7.128IEW simultaneous interpolator

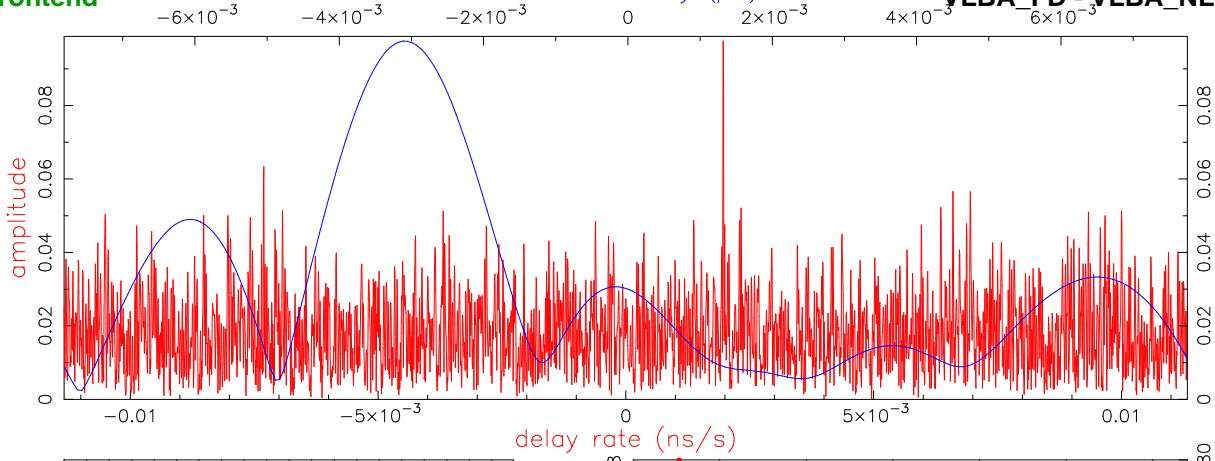
Mk4/DiFX fourfit 3.20 rev 0

frontend

3C454\_3.128IEW, No0117, fn

VLBA\_FD - VLBA\_NL, fgroup W, pol LL

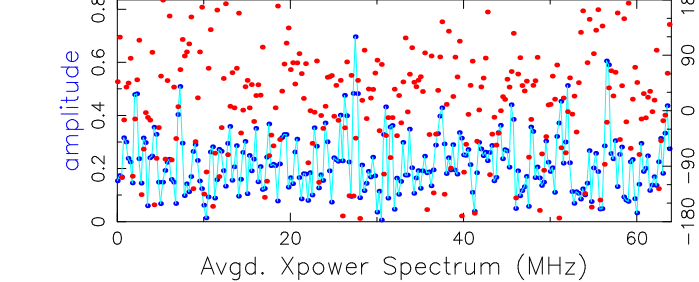
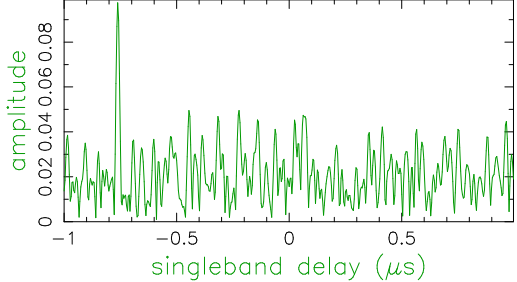
multiband delay ( $\mu$ s)



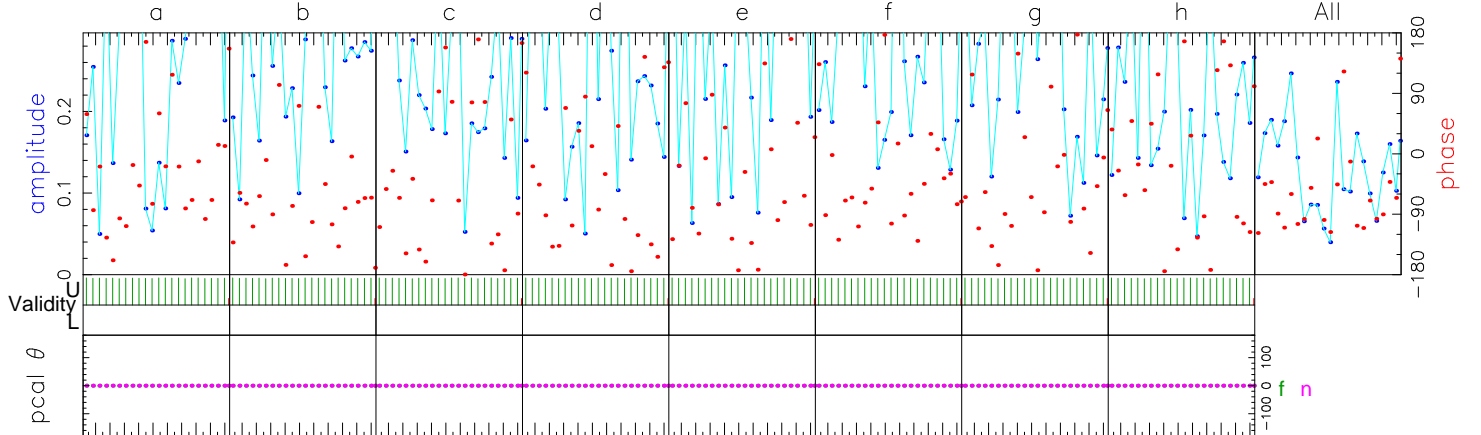
Fringe quality 0

SNR 6.4  
 Int time 576.908  
 Amp 0.099  
 Phase -74.0  
 PFD 7.7e-02  
 Delays (us)  
 SBD -0.761447  
 MBD -0.003085  
 Fringe rate (Hz) 0.169656  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512

Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091507.68  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build 2020:070:232021  
 2020:071:145130  
 2019:280:115849  
 RA & Dec (J2000) 22h53m57.747940s +16°08'53.560909"



Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec

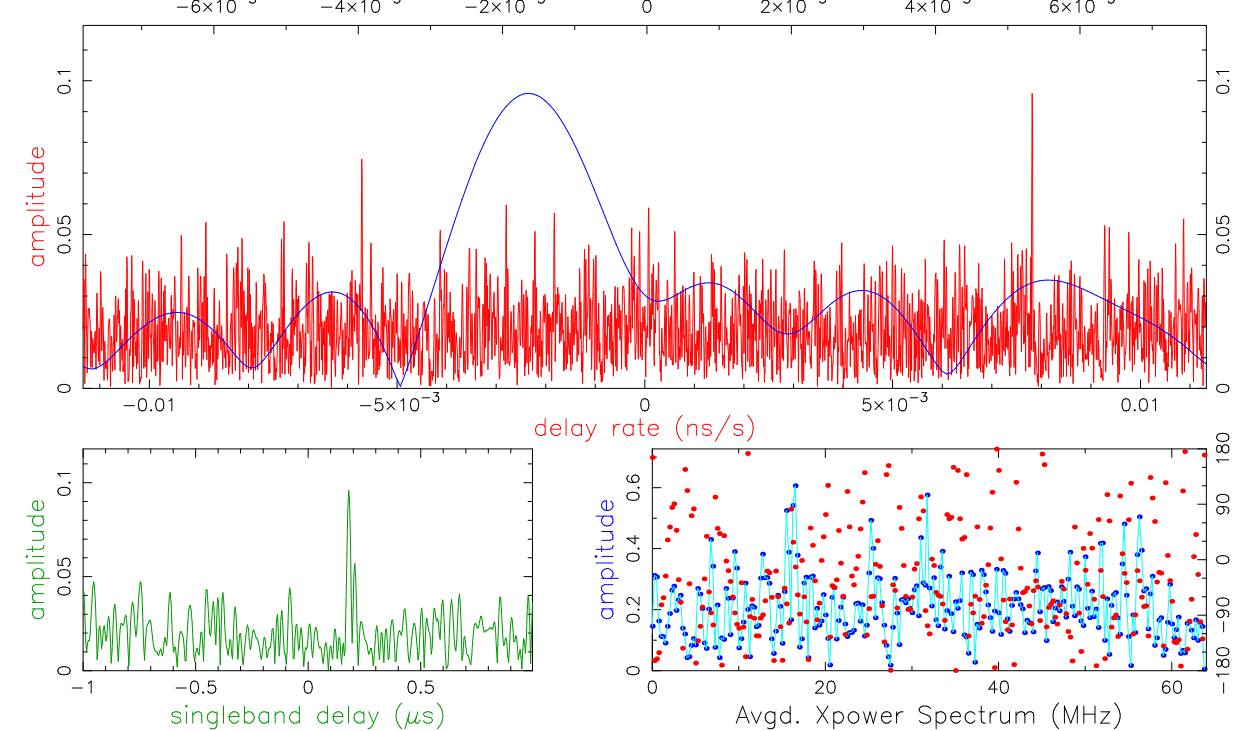


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-57.6	-82.5	-93.7	-86.2	-97.6	-53.7	-82.2	-71.5	Phase	-74.0
	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0	Ampl.	0.1
	34.6	272.5	266.1	39.4	143.0	61.6	40.1	247.0	Sbd box	62.1
U/L	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0	APs used	
f	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
f:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
f:n	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	
n	1000	1000	1000	1000	1000	1000	1000	1000		
f	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	3.10319626701E+03		Apriori delay (usec)		3.10396497742E+03		Resid mbdelay (usec)		-3.08541E-03	+/- 1.7E-04
Sband delay (usec)	3.10320352992E+03		Apriori clock (usec)		-2.6072441E+01		Resid sbdelay (usec)		-7.61447E-01	+/- 1.3E-03
Phase delay (usec)	3.10396497503E+03		Apriori clockrate (us/s)		-2.2517302E-07		Resid phdelay (usec)		-2.38594E-06	+/- 5.8E-07
Delay rate (us/s)	-8.79144458271E-02		Apriori rate (us/s)		-8.79164153658E-02		Resid rate (us/s)		1.96954E-06	+/- 1.7E-09
Total phase (deg)			Apriori accel (us/s/s)		-2.15826551191E-05		Resid phase (deg)		-74.0	+/- 17.9

ph/seg (deg) 52.1 42.9 Search (4096X32) 0.094 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 65.4 74.8 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 17.9 25.3 Inc. seg. avg. 0.103 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 42.8 44.1 Inc. frq. avg. 0.093 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 f: az 272.5 el 29.0 pa 63.5 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) 477.096 -1828.800 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/fn..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/fn.W.17.128IEW

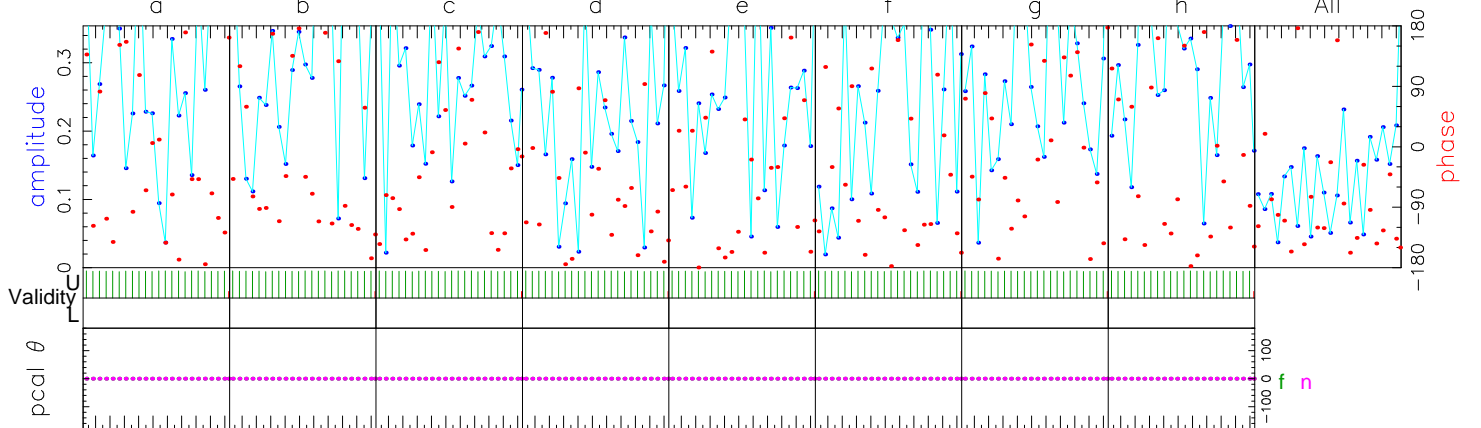
Mk4/DiFX fourfit 3.20 rev 0  
 frontend

3C454\_3.128IEW, No0117, fn  
 VLBA\_FD - VLBA\_NL, fgroup W, pol RR



Fringe quality 0  
 SNR 6.3  
 Int time 576.908  
 Amp 0.118  
 Phase -118.0  
 PFD 1.3e-01  
 Delays (us)  
 SBD 0.180495  
 MBD -0.001614  
 Fringe rate (Hz) 0.674168  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091507.68  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145138  
 2019:280:115849  
 RA & Dec (J2000)  
 22h53m57.747940s  
 +16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



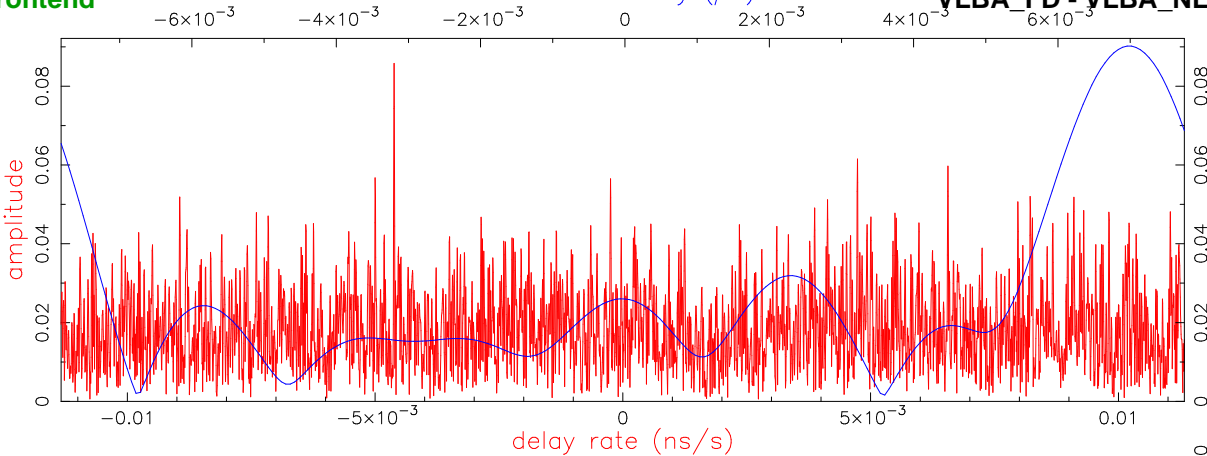
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-133.9	-118.9	-102.7	-101.5	-106.8	-113.0	-81.2	-142.0	Phase	-118.0
	0.1	0.2	0.1	0.1	0.1	0.1	0.0	0.2	Ampl.	0.1
	420.1	303.4	172.3	408.6	351.3	467.7	79.1	377.7	Sbd box	303.2
U/L	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0	APs used	
f	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
f:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
f:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
f	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
f	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	3.10415086322E+03		Apriori delay (usec)		3.10396497742E+03		Resid mbdelay (usec)		-1.61419E-03	+/- 1.7E-04
Sband delay (usec)	3.10414547242E+03		Apriori clock (usec)		-2.6072441E+01		Resid sbdelay (usec)		1.80495E-01	+/- 1.4E-03
Phase delay (usec)	3.10396497361E+03		Apriori clockrate (us/s)		-2.2517302E-07		Resid phdelay (usec)		-3.80505E-06	+/- 5.8E-07
Delay rate (us/s)	-8.79085889487E-02		Apriori rate (us/s)		-8.79164153658E-02		Resid rate (us/s)		7.82642E-06	+/- 1.7E-09
Total phase (deg)			Apriori accel (us/s/s)		-2.15826551191E-05		Resid phase (deg)		-118.0	+/- 18.1

ph/seg (deg) 53.9 43.5 Search (4096X32) 0.095 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 74.1 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 25.6 Inc. seg. avg. 0.122 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 44.3 44.8 Inc. frq. avg. 0.111 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 f: az 272.5 el 29.0 pa 63.5 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) 477.096 -1828.800 ion window (TEC) 0.00 0.00 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/fn..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/fn.W.36.128IEW

Mk4/DiFX fourfit 3.20 rev 0  
 frontend

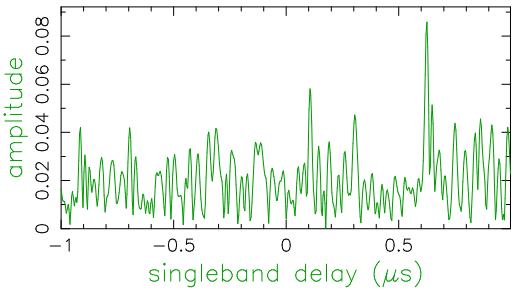
3C454\_3.128IEW, No0117, fn  
 VLBA\_FD - VLBA\_NL, fgroup W, pol LR

multiband delay ( $\mu$ s)

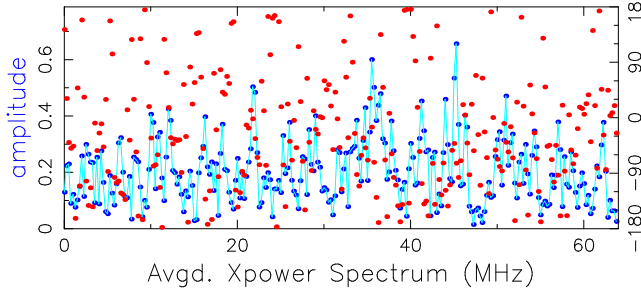


Fringe quality 0

SNR 5.6  
 Int time 576.907  
 Amp 0.092  
 Phase 29.1  
 PFD 1.0e+00  
 Delays (us)  
 SBD 0.624426  
 MBD -0.008301  
 Fringe rate (Hz)  
 -0.398482  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

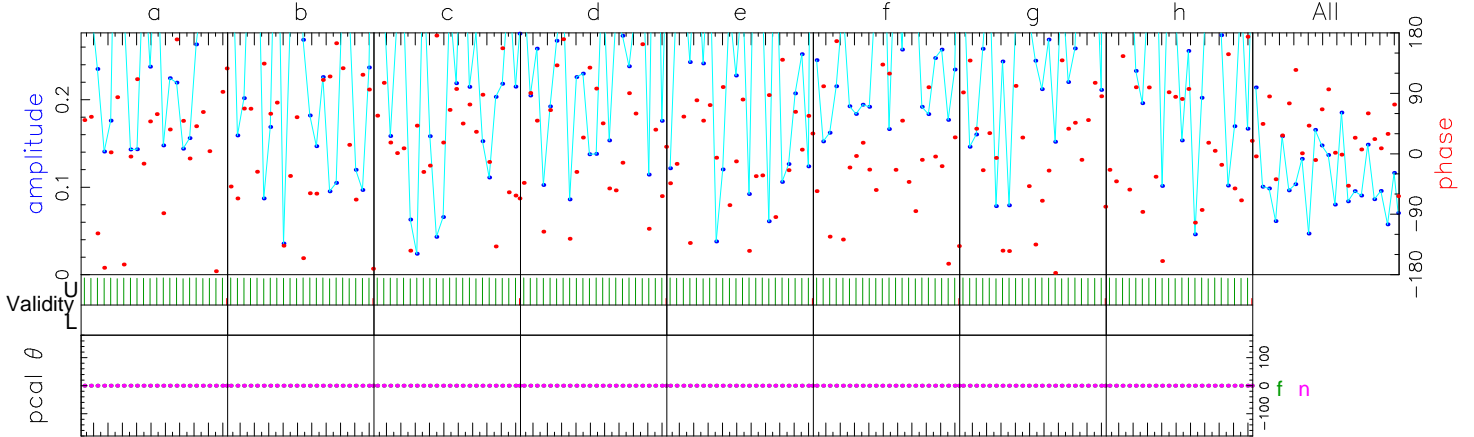


delay rate (ns/s)



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091507.68  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145146  
 2019:280:115849  
 RA & Dec (J2000)  
 22h53m57.747940s  
 +16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec

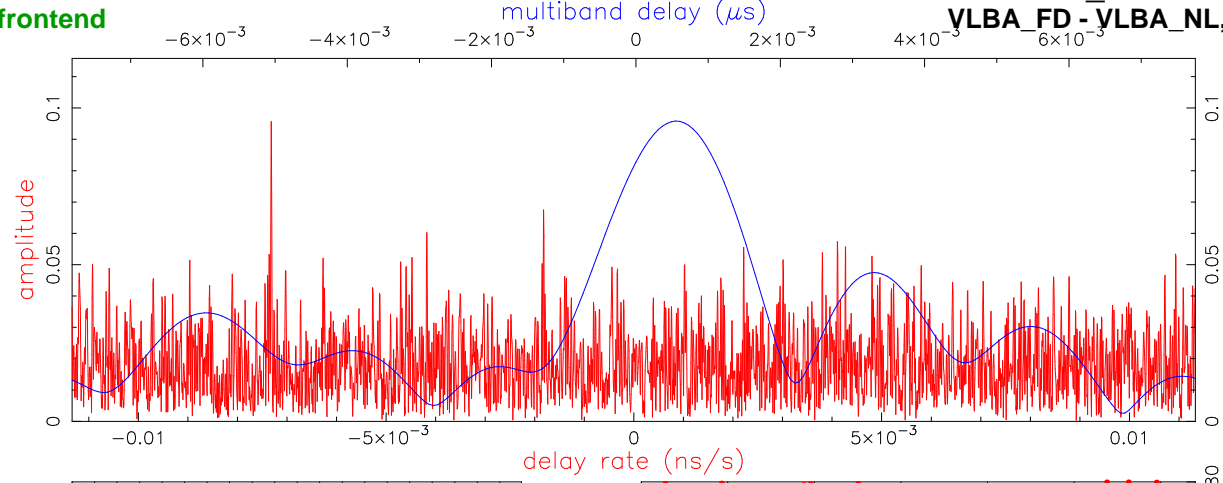


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0		
f	1000	1000	1000	1000	1000	1000	1000	1000	APs used	1000
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	1000
f:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	0:0
f:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	0:0
f	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	1000
n	1000	1000	1000	1000	1000	1000	1000	1000		1000
f	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)		3.10458167664E+03				3.10396497742E+03			Resid mbdelay (usec)	-8.30078E-03 +/- 1.9E-04
Sband delay (usec)		3.10458940317E+03				-2.6072441E+01			Resid sbdelay (usec)	6.24426E-01 +/- 1.5E-03
Phase delay (usec)		3.10396497836E+03				-2.2517302E-07			Resid phdelay (usec)	9.39072E-07 +/- 6.5E-07
Delay rate (us/s)		-8.79210413475E-02				-8.79164153658E-02			Resid rate (us/s)	-4.62598E-06 +/- 1.9E-09
Total phase (deg)			84.9			-2.15826551191E-05			Resid phase (deg)	29.1 +/- 20.3

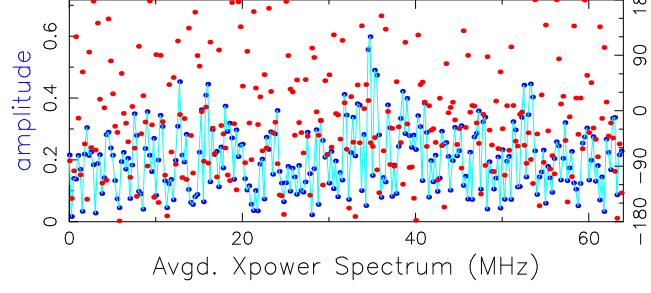
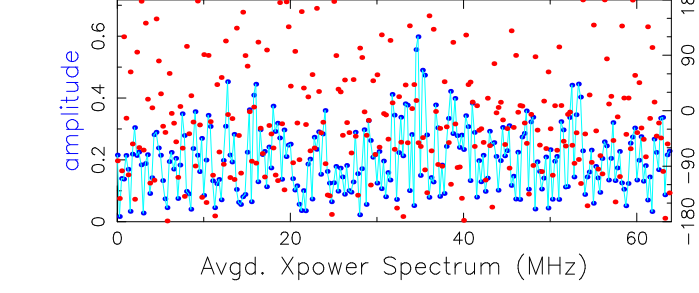
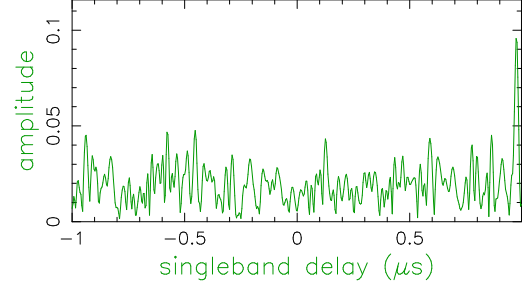
ph/seg (deg) 43.5 48.7 Search (4096X32) 0.088 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 58.1 84.9 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 30.9 28.7 Inc. seg. avg. 0.089 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 23.7 50.1 Inc. frq. avg. 0.091 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 f: az 272.5 el 29.0 pa 63.5 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) 477.096 -1828.800 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/fn..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/fn.W.56.128IEW

Mk4/DiFX fourfit 3.20 rev 0  
frontend

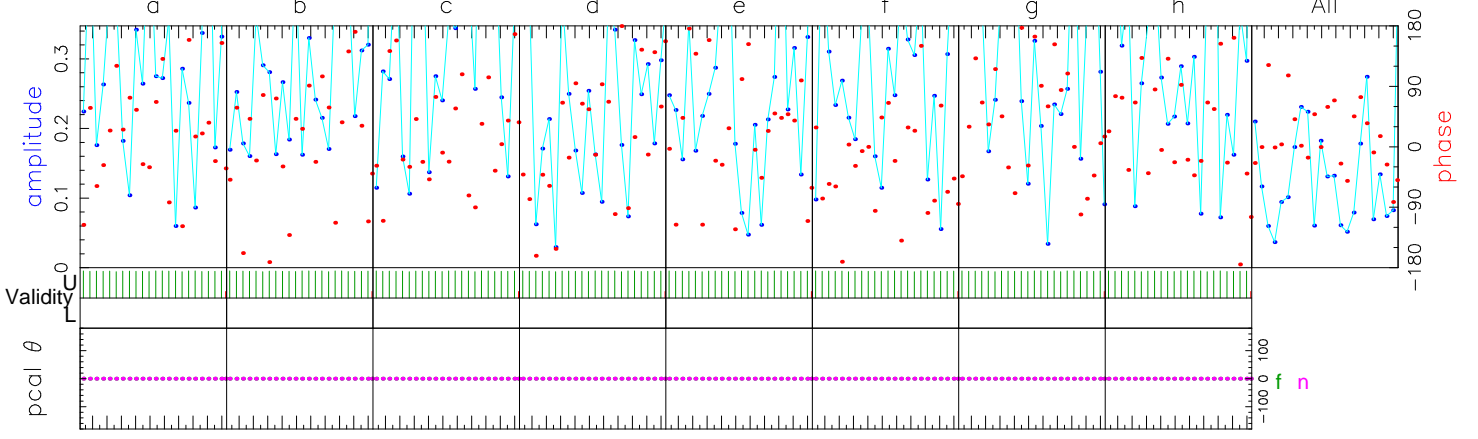
3C454\_3.128IEW, No0117, fn  
VLBA\_FD - VLBA\_NL, fgroup W, pol RL



Fringe quality 0  
SNR 6.4  
Int time 576.908  
Amp 0.116  
Phase 15.4  
PFD 1.0e-01  
Delays (us)  
SBD 0.974136  
MBD 0.000617  
Fringe rate (Hz)  
-0.631531  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 091507.68  
Stop 092500.06  
FRT 092000.00  
Corr/FF/build  
2020:070:232021  
2020:071:145157  
2019:280:115849  
RA & Dec (J2000)  
22h53m57.747940s  
+16°08'53.560909"



Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



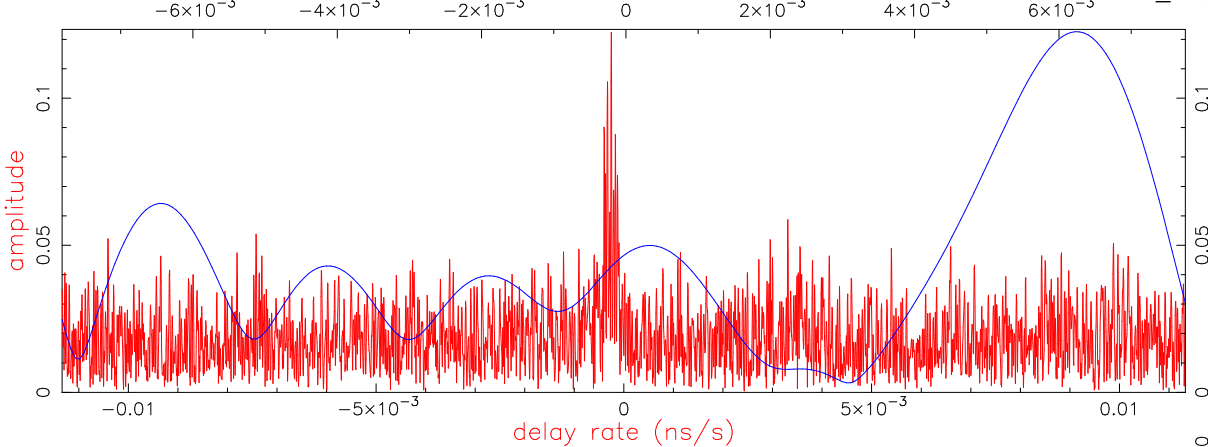
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All		
U/L	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0				
f	1000	1000	1000	1000	1000	1000	1000	1000				
n	1000	1000	1000	1000	1000	1000	1000	1000				
f:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0				
f:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0				
f	1000	1000	1000	1000	1000	1000	1000	1000				
n	1000	1000	1000	1000	1000	1000	1000	1000				
f	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR				
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL				
Group delay (usec)(sbd)		3.10493434443E+03				3.10396497742E+03			6.17015E-04	+/- 1.7E-04		
Sband delay (usec)		3.10493911392E+03				-2.6072441E+01			9.74136E-01	+/- 1.4E-03		
Phase delay (usec)		3.10396497792E+03				-2.2517302E-07			4.98173E-07	+/- 5.8E-07		
Delay rate (us/s)		-8.79237468143E-02				-8.79164153658E-02			-7.33145E-06	+/- 1.7E-09		
Total phase (deg)			71.2			-2.15826551191E-05			15.4	+/- 18.0		
	RMS	Theor.	Amplitude	0.116 +/- 0.018		Pcal mode: MANUAL, MANUAL			PC period (AP's) 5, 5			
ph/seg (deg)	48.9	43.2	Search (4096X32)	0.092		Pcal rate: 0.000E+00, 0.000E+00 (us/s)			sb window (us)	-1.000 1.000		
amp/seg (%)	80.2	75.3	Interp.	0.000		Bits/sample: 2x2			SampCntNorm: enabled	mb window (us)	-0.008 0.008	
ph/frq (deg)	26.7	25.5	Inc. seg. avg.	0.120		Sample rate(MISamp/s): 128			dr window (ns/s)	-0.011 0.011		
amp/frq (%)	25.4	44.4	Inc. frq. avg.	0.114		Data rate(Mb/s): 2048			nlags: 256	t_cohere infinite	ion window (TEC)	0.00 0.00

f: az 272.5 el 29.0 pa 63.5 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) 477.096 -1828.800 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/fn...128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/fn.W.77.128IEW

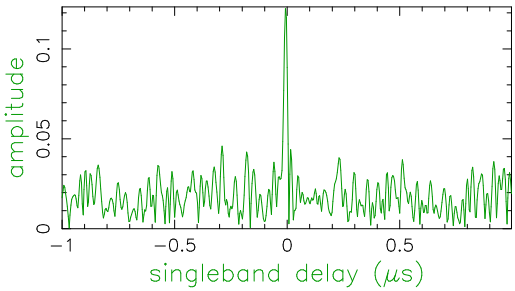


multiband delay ( $\mu$ s)

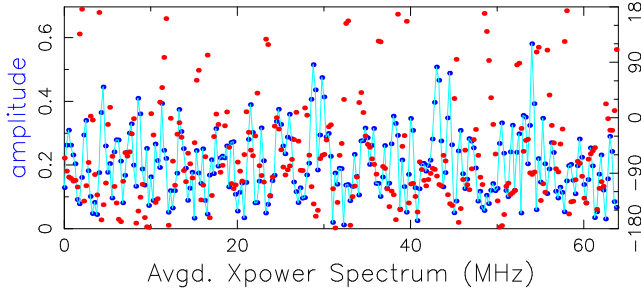
Fringe quality 9



SNR 8.2  
 Int time 584.704  
 Amp 0.123  
 Phase 122.0  
 PFD 2.4e-07  
 Delays (us)  
 SBD -0.006700  
 MBD 0.006313  
 Fringe rate (Hz)  
 -0.022176  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

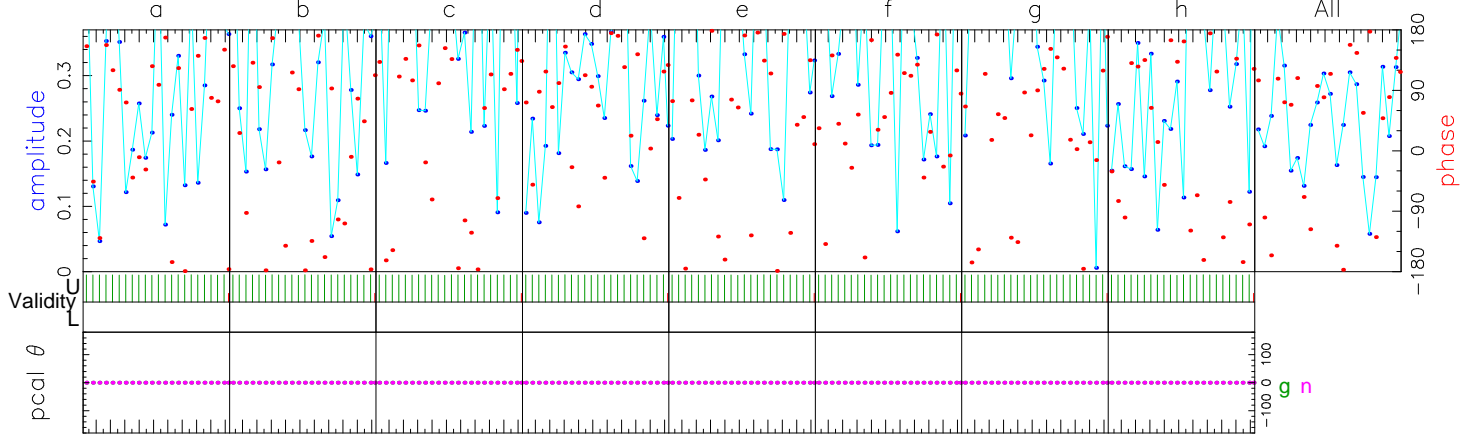


delay rate (ns/s)



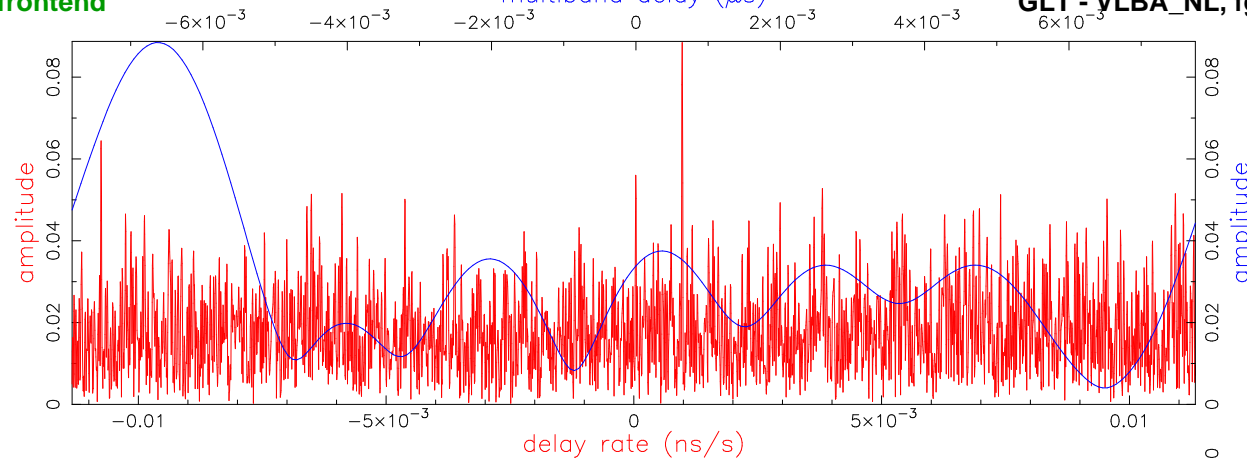
Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091505.63  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145212  
 2019:280:115849  
 RA & Dec (J2000)  
 22h53m57.747940s  
 +16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0		
g	0	0	0	0	0	0	0	0		
n	1000	1000	1000	1000	1000	1000	1000	1000		
g:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
g:n	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		
n	1000	1000	1000	1000	1000	1000	1000	1000		
g	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)	-2.01546658991E+03									
Sband delay (usec)	-2.01546397782E+03									
Phase delay (usec)	-2.01545727414E+03									
Delay rate (us/s)	7.53764025773E-01									
Total phase (deg)			-213.9							
Apriori delay (usec)										
Apriori clock (usec)										
Apriori clockrate (us/s)										
Apriori rate (us/s)										
Apriori accel (us/s/s)										
Resid mbdelay (usec)										
Resid sbdelay (usec)										
Resid phdelay (usec)										
Resid rate (us/s)										
Resid phase (deg)										
Pcal mode: MANUAL, MANUAL										
Pcal rate: 0.000E+00, 0.000E+00 (us/s)										
Bits/sample: 2x2										
Sample rate(MISamp/s): 128										
Data rate(Mb/s): 2048										
nlags: 256										
t_cohere infinite										
sb window (us)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
pcal $\theta$										
Amplitude										
Search (4096X32)										
Interp.										
Inc. seg. avg.										
Inc. frq. avg.										
0.123 +/- 0.015										
0.118										
0.000										
0.197										
0.137										
PC period (AP's) 5, 5										
simultaneous interpolator										

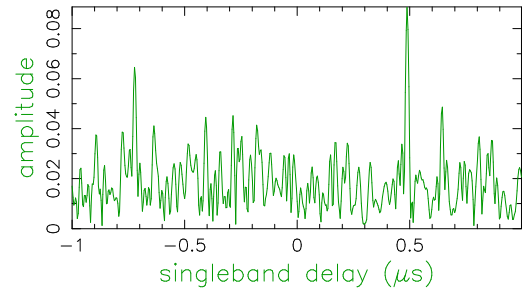
multiband delay ( $\mu\text{s}$ )



Fringe quality 0

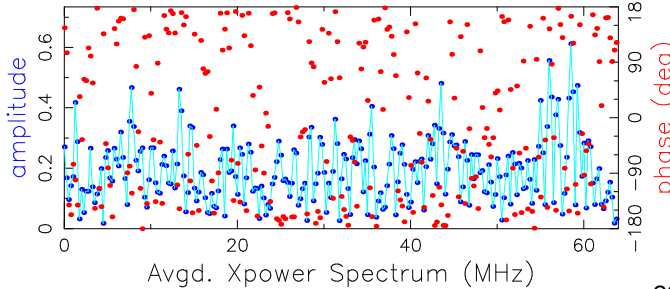
SNR 5.8  
 Int time 584.825  
 Amp 0.089  
 Phase 130.6  
 PFD 9.2e-01  
 Delays (us)  
 SBD 0.488300  
 MBD -0.006623  
 Fringe rate (Hz)  
 0.084004  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091505.63  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145220  
 2019:280:115849  
 RA & Dec (J2000)  
 22h53m57.747940s  
 +16°08'53.560909"

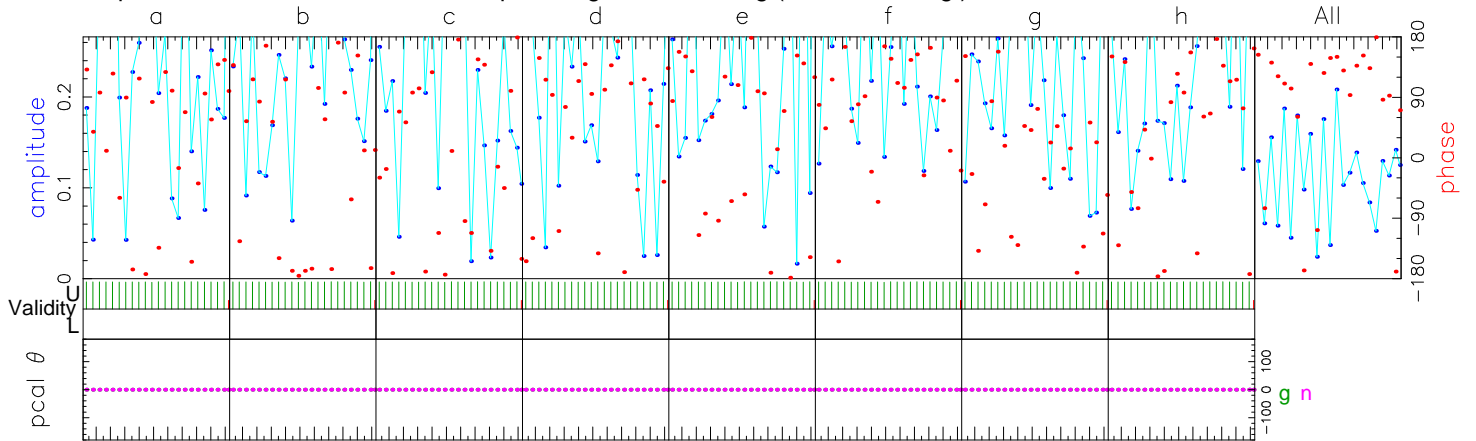


singleband delay ( $\mu\text{s}$ )

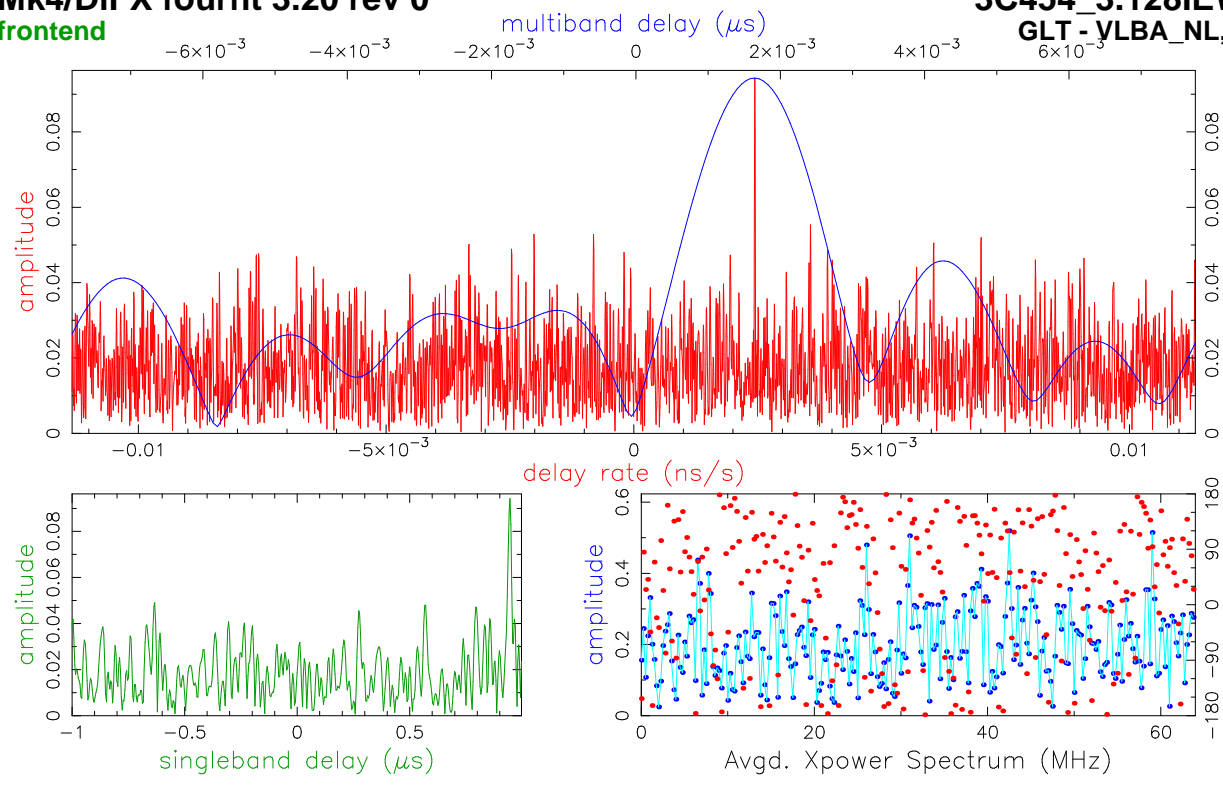
delay rate (ns/s)



Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec

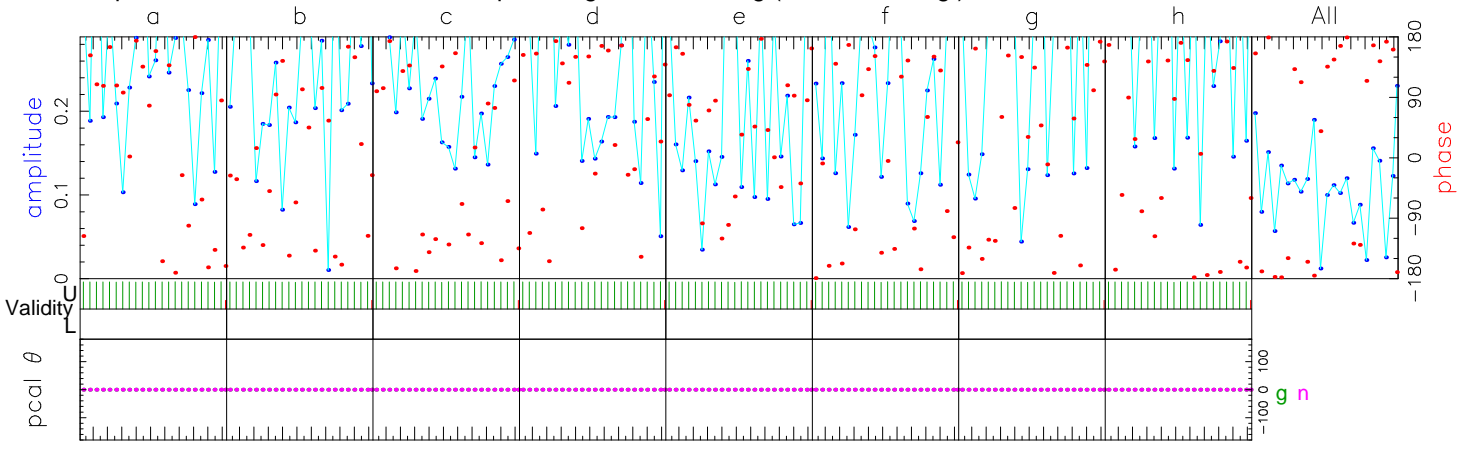


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0		
g	0	0	0	0	0	0	0	0		
n	1000	1000	1000	1000	1000	1000	1000	1000		
g:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
g:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
g	1000	1000	1000	1000	1000	1000	1000	1000		
n	1000	1000	1000	1000	1000	1000	1000	1000		
g	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)	-2.01496390144E+03									
Sband delay (usec)	-2.01496897782E+03									
Phase delay (usec)	-2.01545727386E+03									
Delay rate (us/s)	7.53765258412E-01									
Total phase (deg)			-205.4							
Apriori delay (usec)					-2.01545727807E+03					
Apriori clock (usec)					-2.5236599E+01					
Apriori clockrate (us/s)					-5.9223514E-08					
Apriori rate (us/s)					7.53764283211E-01					
Apriori accel (us/s/s)					2.02859060019E-05					
Resid mbdelay (usec)									-6.62336E-03	+/- 1.9E-04
Resid sbdelay (usec)									4.88300E-01	+/- 1.5E-03
Resid phdelay (usec)									4.21059E-06	+/- 6.3E-07
Resid rate (us/s)									9.75201E-07	+/- 1.8E-09
Resid phase (deg)									130.6	+/- 19.6
Pcal mode:	MANUAL, MANUAL								PC period (AP's) 5, 5	
Pcal rate:	0.000E+00, 0.000E+00 (us/s)								sb window (us) -1.000 1.000	
Bits/sample:	2x2								SampCntNorm: enabled mb window (us) -0.008 0.008	
Sample rate (MSamp/s):	128								dr window (ns/s) -0.011 0.011	
Data rate (Mb/s):	2048								ion window (TEC) 0.00 0.00	
nlags:	256								t_cohere infinite	
g	az 284.3 el 13.3 pa 13.5		n: az 274.6 el 19.6 pa 50.6		u,v (fr/asec) -4450.044 3113.191				simultaneous interpolator	
Control file:	cf_1234_gmva		Input file: /Exps/c192c/v1_CygA2/1234/No0117/gn..128IEW		Output file: /Exps/c192c/v1_CygA2/1234/No0117/gn.W.125.128IEW					



Fringe quality 0  
 SNR 6.2  
 Int time 584.705  
 Amp 0.096  
 Phase 170.8  
 PFD 2.0e-01  
 Delays (us)  
 SBD 0.944671  
 MBD 0.001621  
 Fringe rate (Hz) 0.210742  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091505.63  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145228  
 2019:280:115849  
 RA & Dec (J2000)  
 22h53m57.747940s  
 +16°08'53.560909"

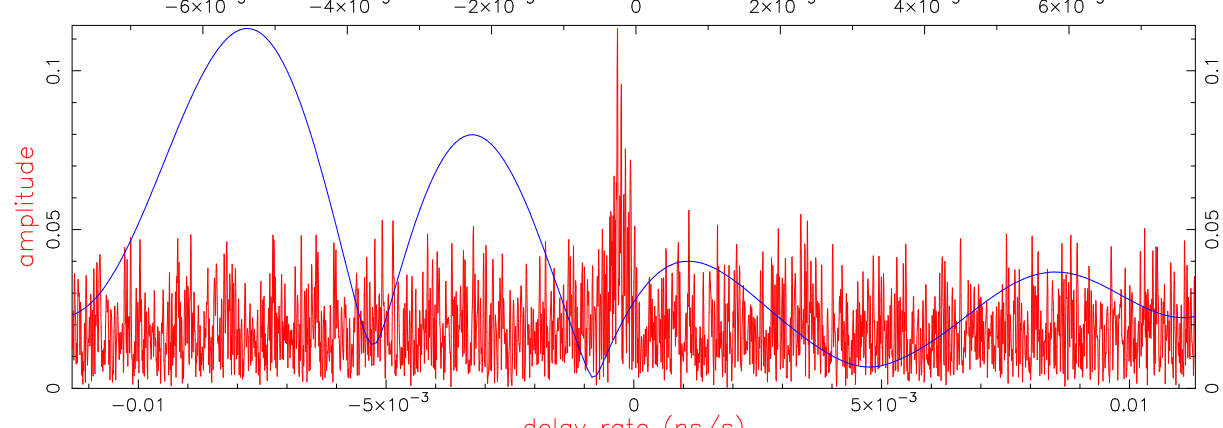
Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



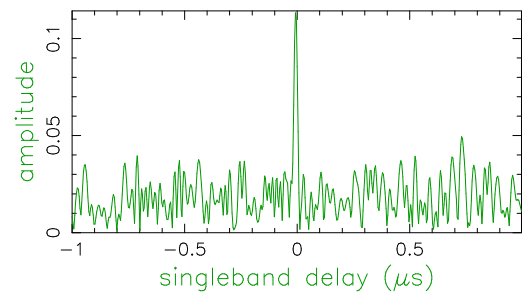
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0		
g	0	0	0	0	0	0	0	0		
n	1000	1000	1000	1000	1000	1000	1000	1000		
g:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
g:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
g	1000	1000	1000	1000	1000	1000	1000	1000		
n	1000	1000	1000	1000	1000	1000	1000	1000		
g	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	-2.01451815736E+03								1.62071E-03	+/- 1.7E-04
Sband delay (usec)	-2.01451260707E+03								9.44671E-01	+/- 1.4E-03
Phase delay (usec)	-2.01545727257E+03								5.50771E-06	+/- 5.9E-07
Delay rate (us/s)	7.53766729715E-01								2.44650E-06	+/- 1.7E-09
Total phase (deg)			-165.2						170.8	+/- 18.3
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										
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

ph/seg (deg) 42.0 44.0  
 amp/seg (%) 54.4 76.8  
 ph/frq (deg) 37.1 25.9  
 amp/frq (%) 39.7 45.3  
 g: az 284.3 el 13.3 pa 13.5  
 n: az 274.6 el 19.6 pa 50.6  
 u,v (fr/asec) -4450.044 3113.191  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/gn..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/gn.W.145.128IEW  
 simultaneous interpolator

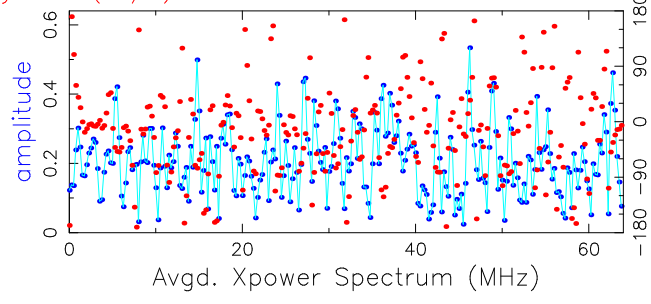
multiband delay ( $\mu$ s)



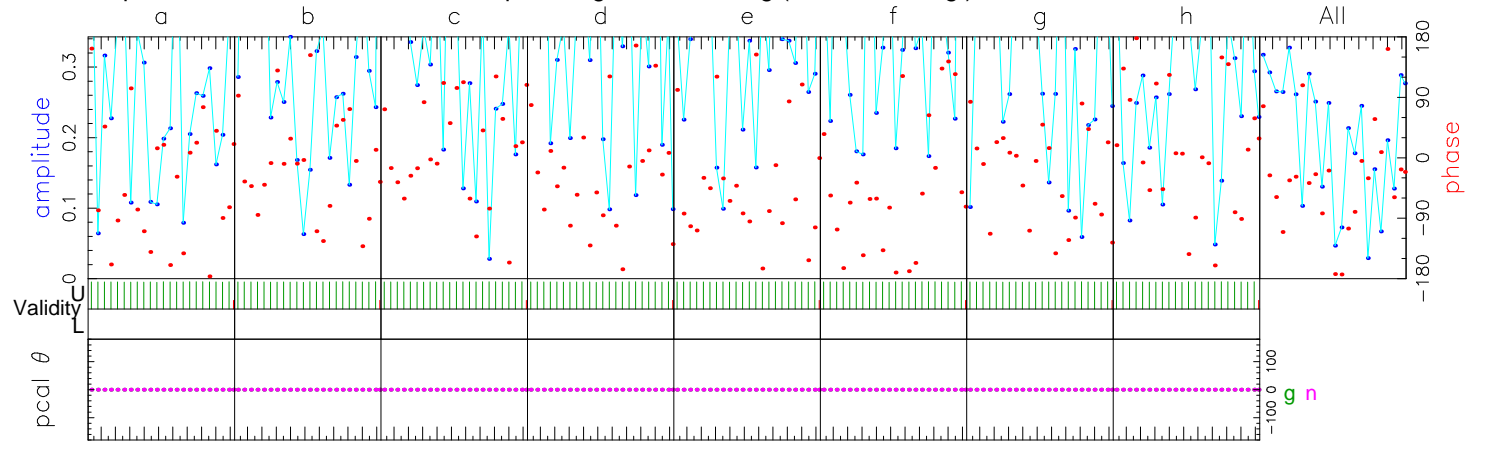
Fringe quality 9  
 SNR 7.6  
 Int time 584.826  
 Amp 0.114  
 Phase -34.8  
 PFD 2.7e-05  
 Delays (us)  
 SBD -0.006648  
 MBD -0.005344  
 Fringe rate (Hz)  
 -0.028718  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091505.63  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145204  
 2019:280:115849  
 RA & Dec (J2000)  
 22h53m57.747940s  
 +16°08'53.560909"



delay rate (ns/s)



Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-60.0	-36.3	24.8	-33.2	-72.5	-89.7	-29.9	7.1	Phase	-34.8
	0.1	0.2	0.2	0.1	0.1	0.1	0.2	0.1	Ampl.	0.1
	102.8	255.6	256.2	17.9	314.0	18.0	255.9	258.9	Sbd box	255.3
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	APs used	
g	0	0	0	0	0	0	0	0	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
g:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
g:n	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	
n	1000	1000	1000	1000	1000	1000	1000	1000		
g	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	-2.01546262245E+03		Apriori delay (usec)		-2.01545727807E+03		Resid mbdelay (usec)		-5.34437E-03 +/- 1.4E-04	
Sband delay (usec)	-2.01546392657E+03		Apriori clock (usec)		-2.5236599E+01		Resid sbdelay (usec)		-6.64850E-03 +/- 1.1E-03	
Phase delay (usec)	-2.01545727920E+03		Apriori clockrate (us/s)		-5.9223514E-08		Resid phdelay (usec)		-1.12379E-06 +/- 4.9E-07	
Delay rate (us/s)	7.53763949829E-01		Apriori rate (us/s)		7.53764283211E-01		Resid rate (us/s)		-3.33382E-07 +/- 1.4E-09	
Total phase (deg)			Apriori accel (us/s/s)		2.02859060019E-05		Resid phase (deg)		-34.8 +/- 15.2	

ph/seg (deg) 75.2 36.4 Search (4096X32) 0.112 PCal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 109.3 63.5 Interp. 0.000 PCal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 41.7 21.4 Inc. seg. avg. 0.166 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 40.4 37.4 Inc. frq. avg. 0.130 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 284.3 el 13.3 pa 13.5 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -4450.044 3113.191 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/gn..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/gn.W.86.128IEW

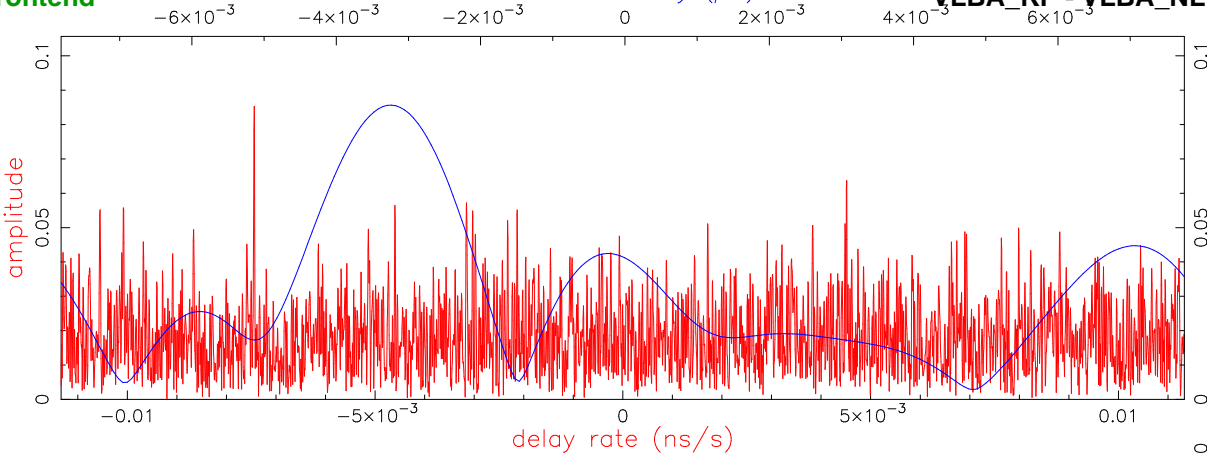
Mk4/DiFX fourfit 3.20 rev 0

frontend

3C454\_3.128IEW, No0117, kn

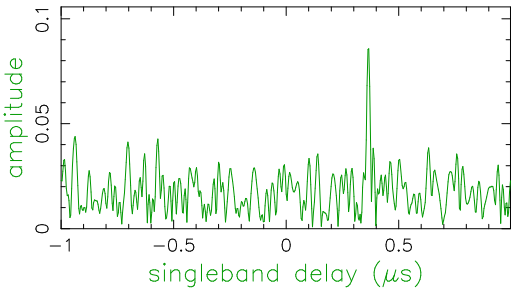
VLBA\_KP - VLBA\_NL, fgroup W, pol RR

multiband delay ( $\mu$ s)

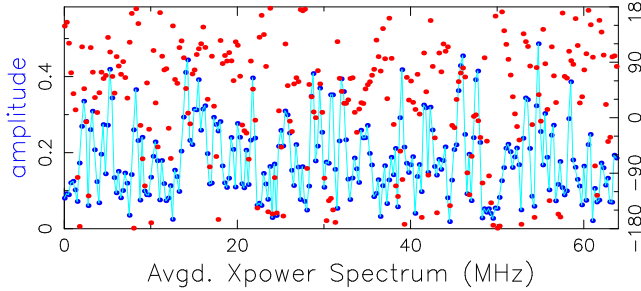


Fringe quality 0

SNR 5.8  
Int time 582.384  
Amp 0.106  
Phase -4.6  
PFD 9.6e-01  
Delays (us)  
SBD 0.365316  
MBD -0.003152  
Fringe rate (Hz)  
-0.641771  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512

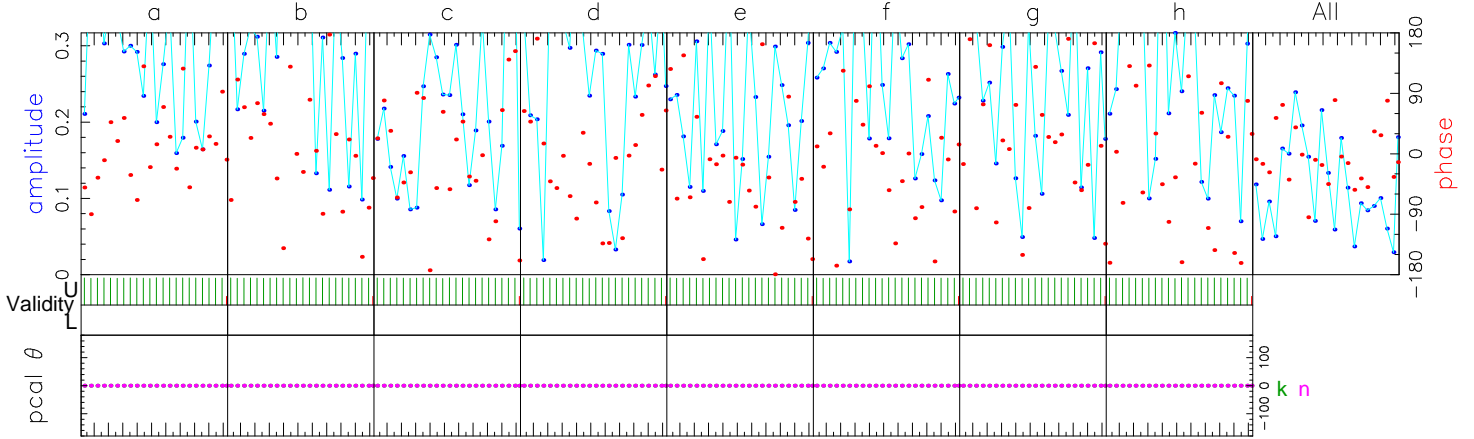


delay rate (ns/s)



Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 091505.63  
Stop 092500.06  
FRT 092000.00  
Corr/FF/build  
2020:070:232021  
2020:071:145217  
2019:280:115849  
RA & Dec (J2000)  
22h53m57.747940s  
+16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0		
k	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
k:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
k:n	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	
n	1000	1000	1000	1000	1000	1000	1000	1000		
k	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

Group delay (usec)(sbd)	5.19750676435E+03	Apriori delay (usec)	5.19713491641E+03	Resid mbdelay (usec)	-3.15206E-03	+/-	1.9E-04
Sband delay (usec)	5.19750023241E+03	Apriori clock (usec)	-2.6949562E+01	Resid sbdelay (usec)	3.65316E-01	+/-	1.5E-03
Phase delay (usec)	5.19713491626E+03	Apriori clockrate (us/s)	-3.2880250E-07	Resid phdelay (usec)	-1.49085E-07	+/-	6.4E-07
Delay rate (us/s)	4.58711820059E-03	Apriori rate (us/s)	4.59456852524E-03	Resid rate (us/s)	-7.45032E-06	+/-	1.9E-09
Total phase (deg)	247.2	Apriori accel (us/s/s)	-3.20951157279E-05	Resid phase (deg)	-4.6	+/-	19.8

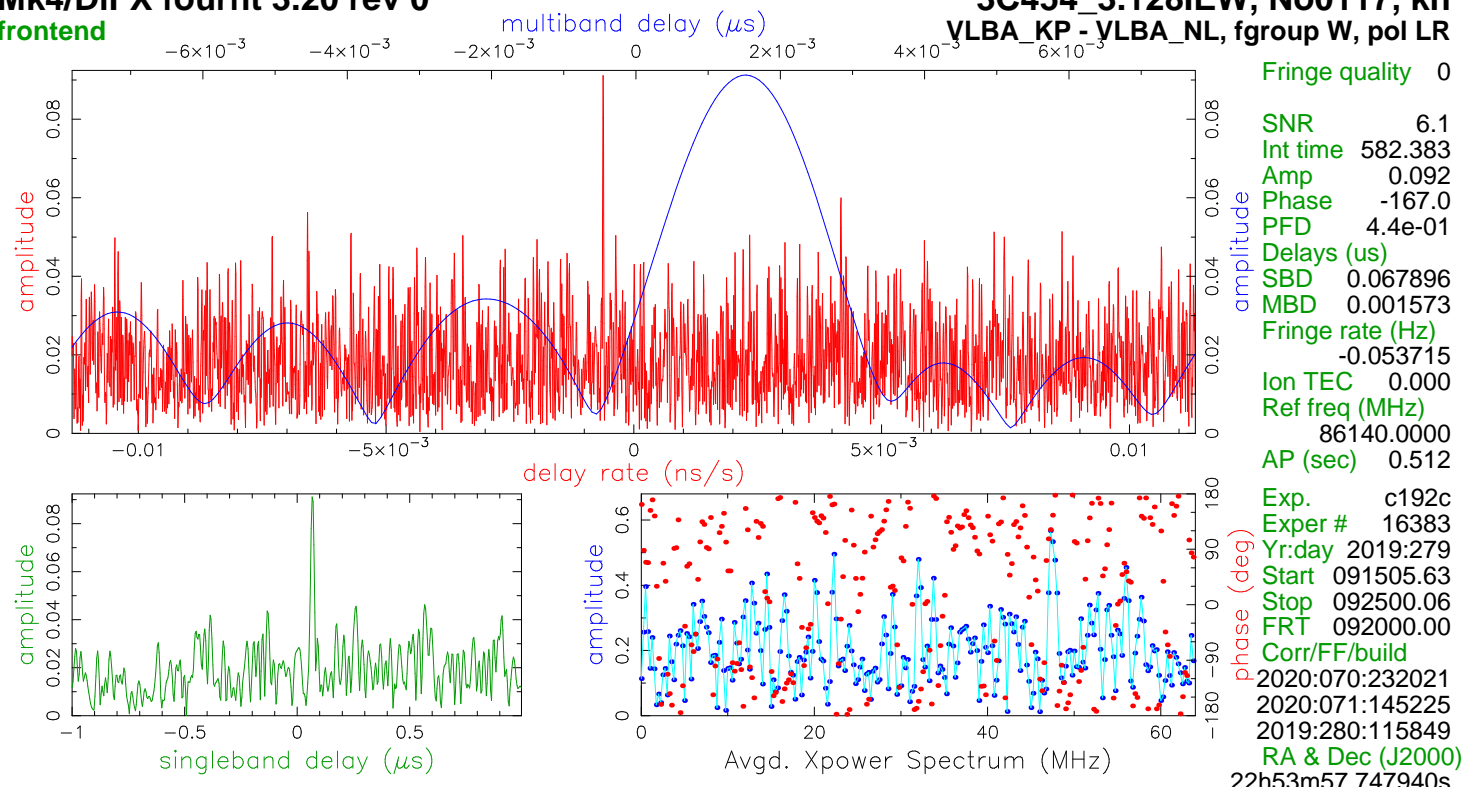
ph/seg (deg)	45.4	Theor.	47.4	Amplitude	0.106 +/- 0.018	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5		
amp/seg (%)	73.0		82.7	Search (4096X32)	0.085	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000		
ph/frq (deg)	31.5		27.9	Interp.	0.000	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008	
amp/frq (%)	52.5		48.8	Inc. seg. avg.	0.102	Sample rate (MSamp/s):	128	dr window (ns/s)	-0.011 0.011		
				Inc. frq. avg.	0.099	Data rate (Mb/s):	2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00 0.00

k: az 267.7 el 35.5 pa 62.0 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -97.166 -1897.478 simultaneous interpolator

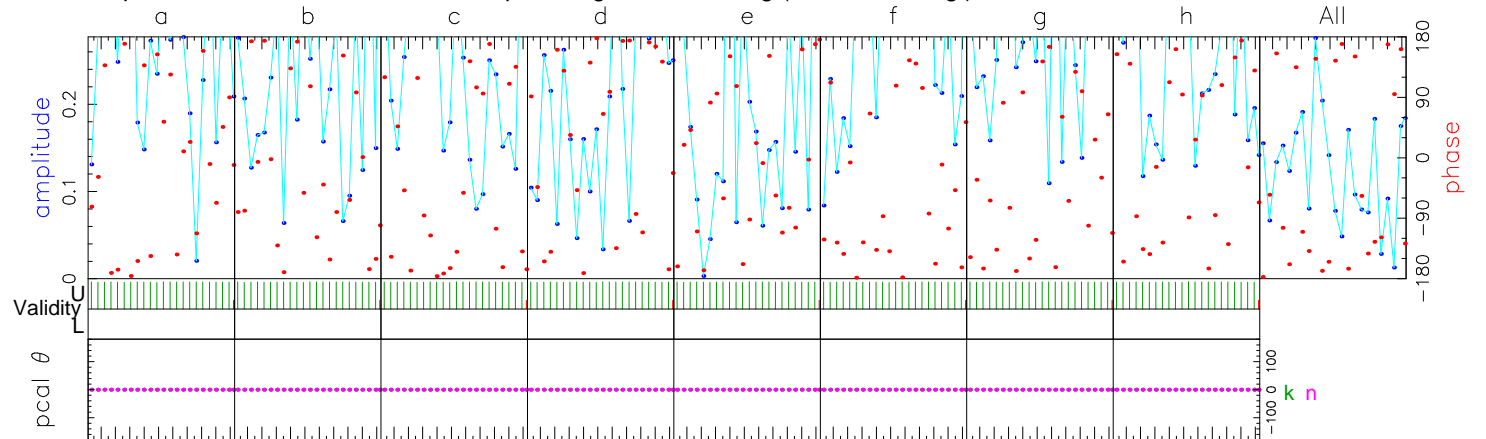
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/kn..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/kn.W.114.128IEW

Mk4/DiFX fourfit 3.20 rev 0  
 frontend

3C454\_3.128IEW, No0117, kn  
 VLBA\_KP - VLBA\_NL, fgroup W, pol LR



Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	155.0	-125.0	-159.8	-174.9	-176.0	-159.1	-143.1	176.3	Phase	-167.0
	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Ampl.	0.1
	6.0	315.2	213.5	171.1	498.0	324.2	158.8	275.3	Sbd box	274.4
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	APs used	
k	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
k:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
k:n	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	
n	1000	1000	1000	1000	1000	1000	1000	1000		
k	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	5.19719898931E+03		Apriori delay (usec)		5.19713491641E+03		Resid mbdelay (usec)		1.57290E-03	+/- 1.8E-04
Sband delay (usec)	5.19720281241E+03		Apriori clock (usec)		-2.6949562E+01		Resid sbdelay (usec)		6.78960E-02	+/- 1.4E-03
Phase delay (usec)	5.19713491103E+03		Apriori clockrate (us/s)		-3.2880250E-07		Resid phdelay (usec)		-5.38400E-06	+/- 6.1E-07
Delay rate (us/s)	4.59394494848E-03		Apriori rate (us/s)		4.59456852524E-03		Resid rate (us/s)		-6.23577E-07	+/- 1.8E-09
Total phase (deg)	84.9		Apriori accel (us/s/s)		-3.20951157279E-05		Resid phase (deg)		-167.0	+/- 18.8

ph/seg (deg) 52.3 45.1 Search (4096X32) 0.088 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5

amp/seg (%) 76.7 78.7 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000

ph/frq (deg) 26.8 26.6 Inc. seg. avg. 0.096 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008

amp/frq (%) 32.2 46.4 Inc. frq. avg. 0.088 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 267.7 el 35.5 pa 62.0 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -97.166 -1897.478 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/kn.1281EW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/kn.W.133.1281EW

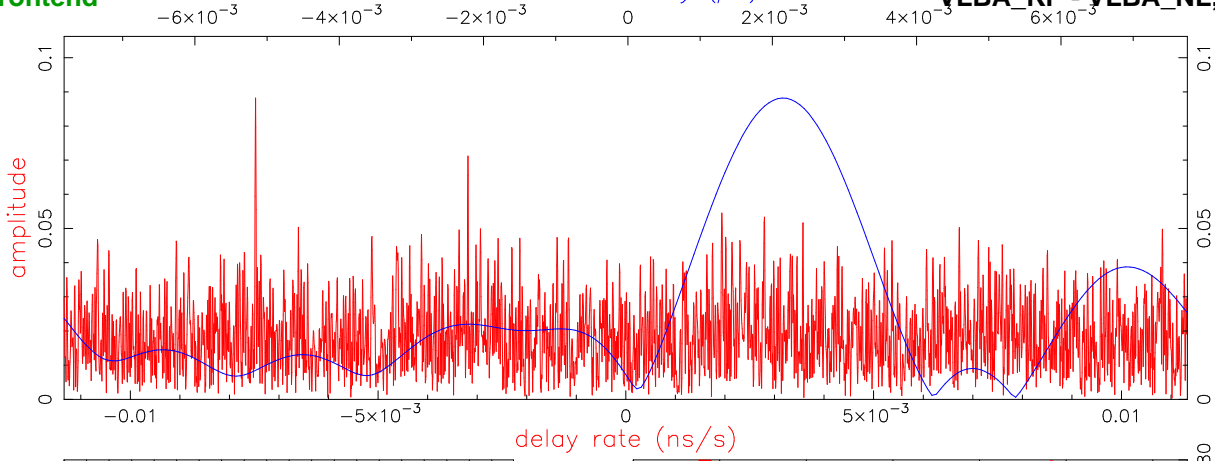
Mk4/DiFX fourfit 3.20 rev 0

frontend

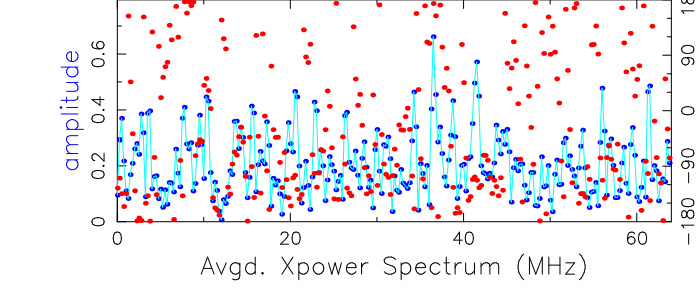
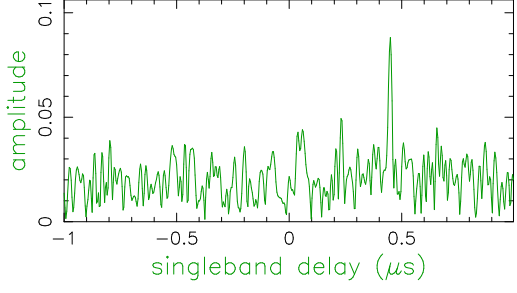
3C454\_3.128IEW, No0117, kn

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

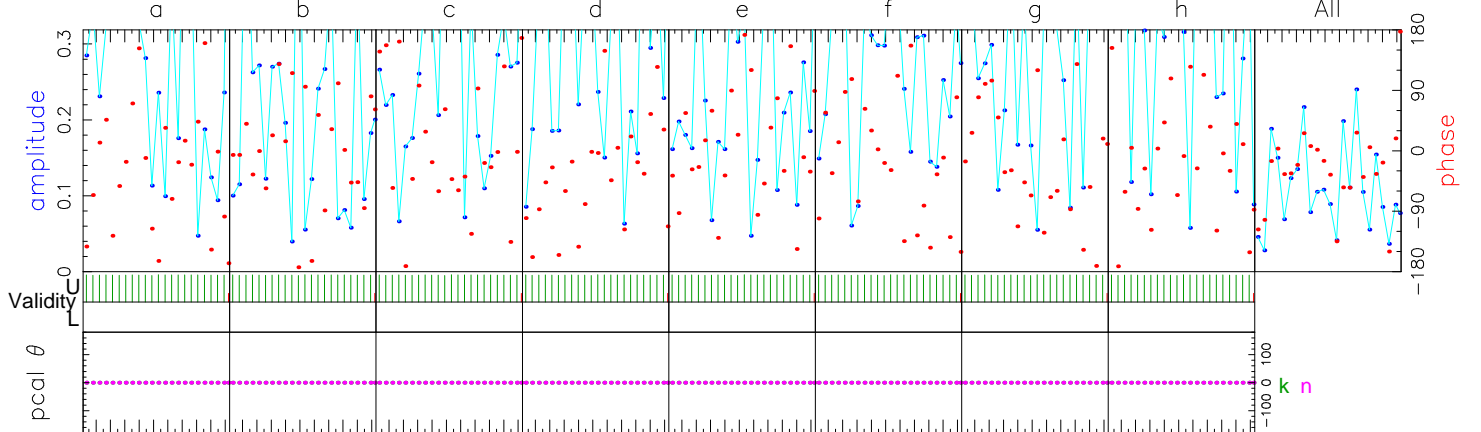
multiband delay ( $\mu$ s)



Fringe quality 0  
 SNR 5.8  
 Int time 582.384  
 Amp 0.106  
 Phase -17.0  
 PFD 9.5e-01  
 Delays (us)  
 SBD 0.449092  
 MBD 0.002144  
 Fringe rate (Hz)  
 -0.644479  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091505.63  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145233  
 2019:280:115849  
 RA & Dec (J2000)  
 22h53m57.747940s  
 +16°08'53.560909"



Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec

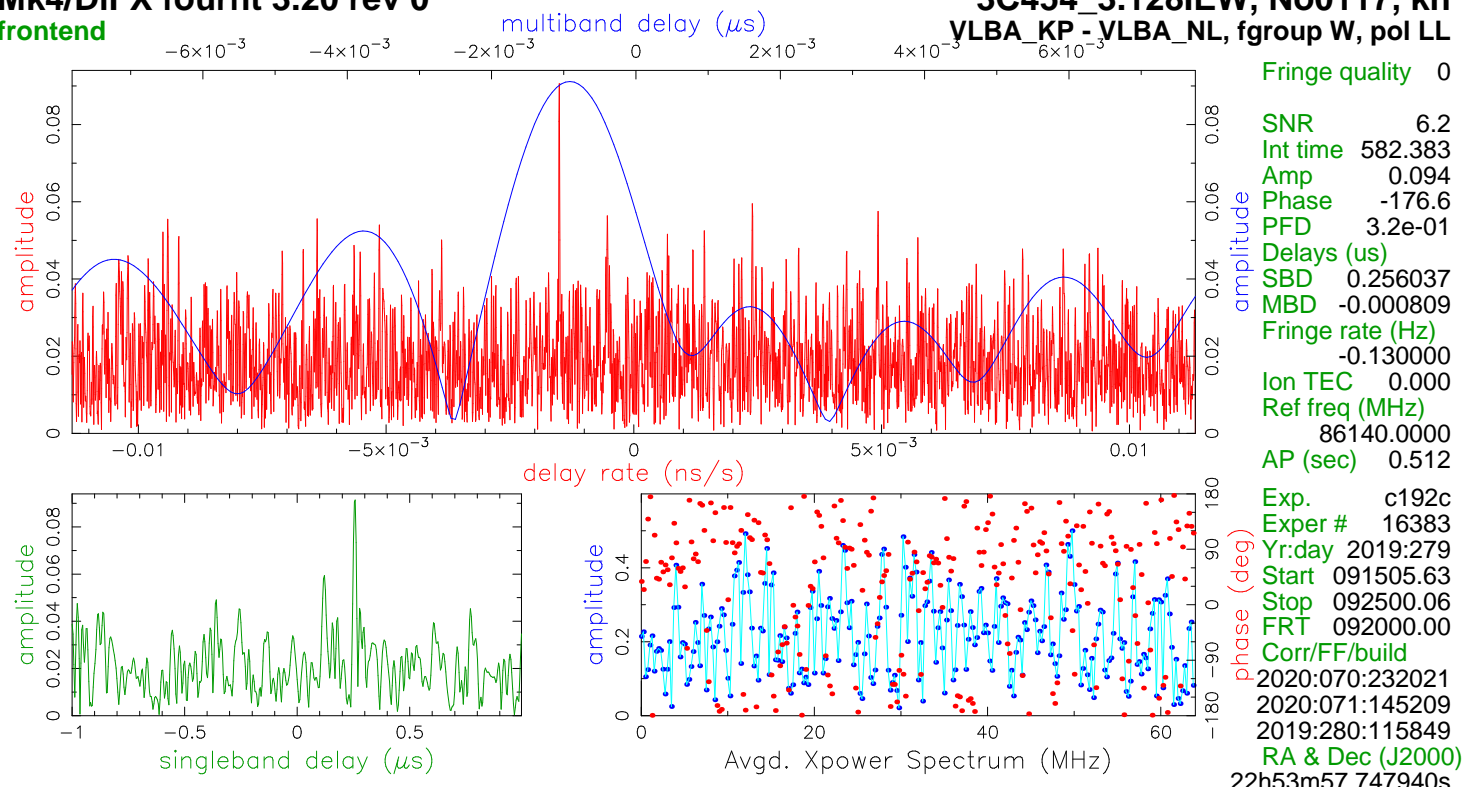


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-33.9	14.3	-15.5	-35.4	-0.5	4.0	-20.5	-23.0	Phase	-17.0
	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	Ampl.	0.1
	417.5	75.8	278.9	372.6	119.2	288.5	369.1	396.7	Sbd box	372.0
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	APs used	
k	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
k:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
k:n	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	
n	1000	1000	1000	1000	1000	1000	1000	1000		
k	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	5.19759018555E+03		Apriori delay (usec)		5.19713491641E+03		Resid mbdelay (usec)		2.14414E-03	+/- 1.9E-04
Sband delay (usec)	5.19758400841E+03		Apriori clock (usec)		-2.6949562E+01		Resid sbdelay (usec)		4.49092E-01	+/- 1.5E-03
Phase delay (usec)	5.19713491586E+03		Apriori clockrate (us/s)		-3.2880250E-07		Resid phdelay (usec)		-5.47043E-07	+/- 6.3E-07
Delay rate (us/s)	4.58708676614E-03		Apriori rate (us/s)		4.59456852524E-03		Resid rate (us/s)		-7.48176E-06	+/- 1.8E-09
Total phase (deg)			Apriori accel (us/s/s)		-3.20951157279E-05		Resid phase (deg)		-17.0	+/- 19.7

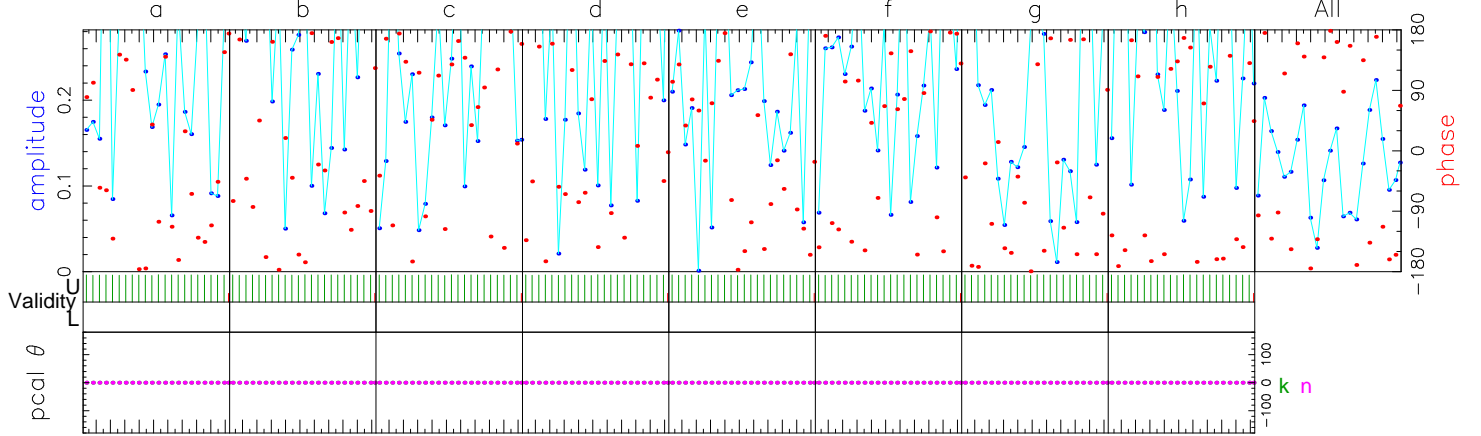
ph/seg (deg) 55.7 47.2 Search (4096X32) 0.087 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 70.7 82.4 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 19.9 27.8 Inc. seg. avg. 0.100 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 31.2 48.6 Inc. frq. avg. 0.099 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 267.7 el 35.5 pa 62.0 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -97.166 -1897.478 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/kn..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/kn.W.153.128IEW

Mk4/DiFX fourfit 3.20 rev 0  
frontend

3C454\_3.128IEW, No0117, kn  
VLBA\_KP - VLBA\_NL, fgroup W, pol LL



Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-172.7	-119.0	163.4	150.7	-165.8	159.4	-138.8	174.1	Phase	-176.6
	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.2	Ampl.	0.1
	290.2	486.5	319.3	291.4	168.8	409.8	175.3	322.8	Sbd box	322.5
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	APs used	
k	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
k:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
k:n	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	
n	1000	1000	1000	1000	1000	1000	1000	1000		
k	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)		5.19738410779E+03		Apriori delay (usec)		5.19713491641E+03		Resid mbdelay (usec)	-8.08624E-04	+/- 1.8E-04
Sband delay (usec)		5.19739095341E+03		Apriori clock (usec)		-2.6949562E+01		Resid sbdelay (usec)	2.56037E-01	+/- 1.4E-03
Phase delay (usec)		5.19713491072E+03		Apriori clockrate (us/s)		-3.2880250E-07		Resid phdelay (usec)	-5.69381E-06	+/- 6.0E-07
Delay rate (us/s)		4.59305935065E-03		Apriori rate (us/s)		4.59456852524E-03		Resid rate (us/s)	-1.50917E-06	+/- 1.7E-09
Total phase (deg)			75.3	Apriori accel (us/s/s)		-3.20951157279E-05		Resid phase (deg)	-176.6	+/- 18.6

ph/seg (deg) 48.1 44.6 Amplitude 0.094 +/- 0.015 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5

amp/seg (%) 64.4 77.9 Search (4096X32) 0.090 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000

ph/frq (deg) 34.2 26.3 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008

amp/frq (%) 50.4 45.9 Inc. seg. avg. 0.097 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011

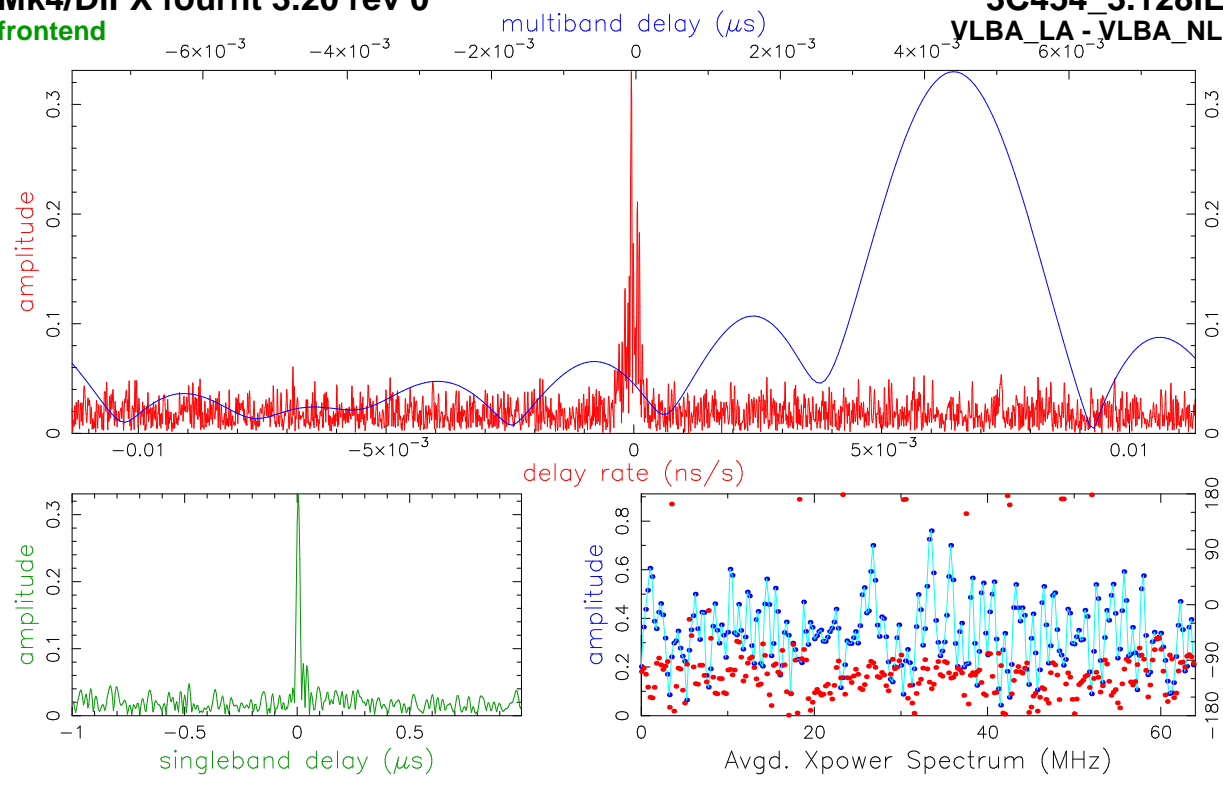
k: az 267.7 el 35.5 pa 62.0 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -97.166 -1897.478 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/kn..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/kn.W.94.128IEW simultaneous interpolator



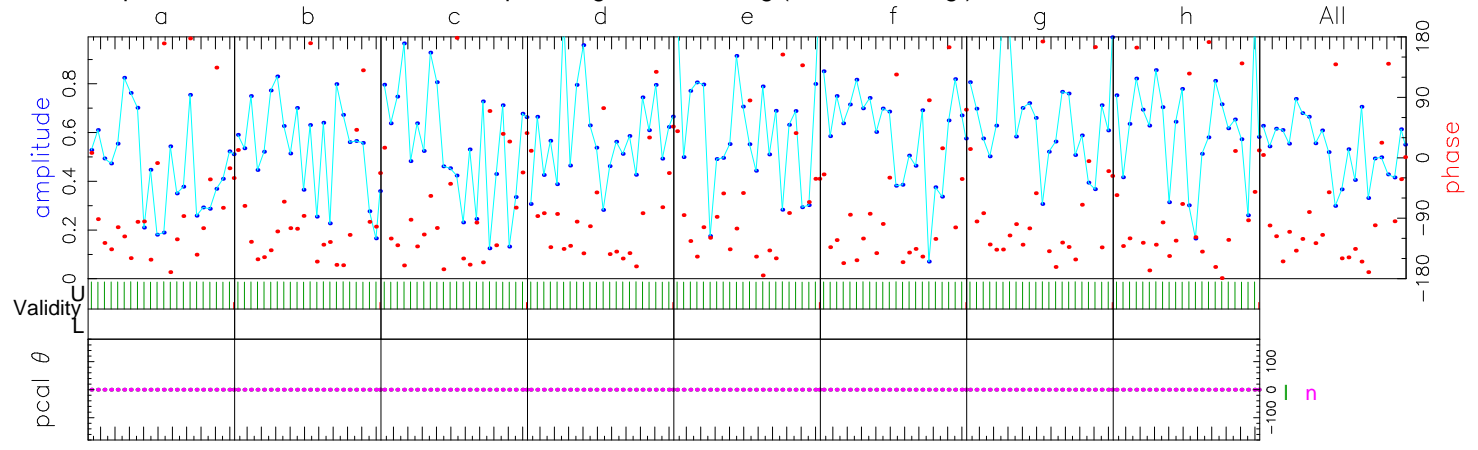
Mk4/DiFX fourfit 3.20 rev 0  
frontend

3C454\_3.128IEW, No0117, In  
VLBA\_LA - VLBA\_NL, fgroup W, pol LL



Fringe quality 9  
SNR 21.8  
Int time 582.146  
Amp 0.331  
Phase -115.3  
PFD 0.0e+00  
Delays (us)  
SBD 0.004661  
MBD 0.004419  
Fringe rate (Hz)  
-0.004352  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 091507.68  
Stop 092500.06  
FRT 092000.00  
Corr/FF/build  
2020:070:232021  
2020:071:145228  
2019:280:115849  
RA & Dec (J2000)  
22h53m57.747940s  
+16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec

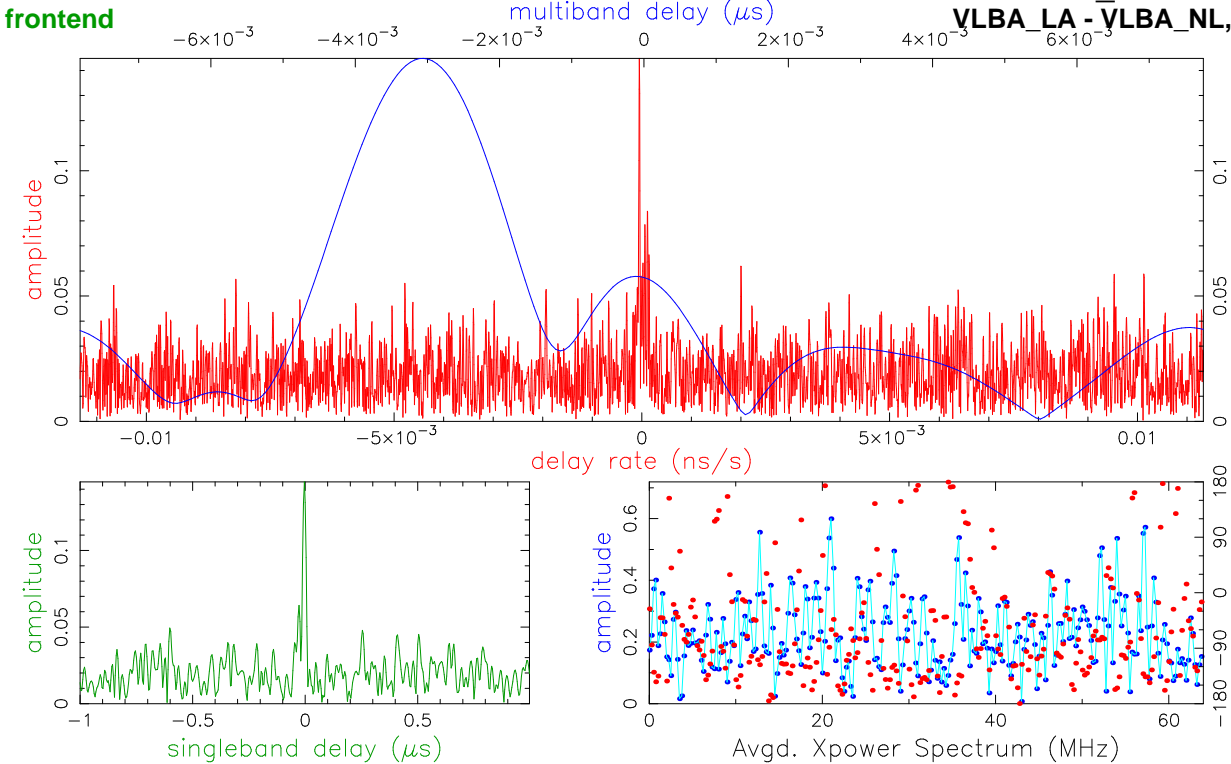


86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
-116.1	-124.5	-108.3	-111.5	-102.4	-115.1	-111.8	-128.6	Phase	-115.3
0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	Ampl.	0.3
258.7	258.3	257.9	258.3	258.1	258.1	257.9	258.0	Sbd box	258.2
U/L 1157/0	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0	APs used	
l 1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n 1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
l:n 0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
l:n 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	
n 1000	1000	1000	1000	1000	1000	1000	1000		
l W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
n W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
								Chan ids	
								Tracks	
Group delay (usec)(sbd)	3.76744606601E+03		Apriori delay (usec)	3.76744164731E+03	Resid mbdelay (usec)	4.41870E-03	+/-	5.0E-05	
Sband delay (usec)	3.76744630831E+03		Apriori clock (usec)	-2.7323353E+01	Resid sbdelay (usec)	4.66100E-03	+/-	3.9E-04	
Phase delay (usec)	3.76744164360E+03		Apriori clockrate (us/s)	-4.8569552E-07	Resid phdelay (usec)	-3.71822E-06	+/-	1.7E-07	
Delay rate (us/s)	-1.01448313954E-03		Apriori rate (us/s)	-1.01443262222E-03	Resid rate (us/s)	-5.05173E-08	+/-	4.9E-10	
Total phase (deg)		64.6	Apriori accel (us/s/s)	-2.27481581014E-05	Resid phase (deg)	-115.3	+/-	5.2	

ph/seg (deg) 60.4 12.6 Search (4096X32) 0.329 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 71.8 22.0 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 9.2 7.4 Inc. seg. avg. 0.524 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 17.1 13.0 Inc. frq. avg. 0.330 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 268.3 el 30.9 pa 57.6 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -43.328 -1213.266 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/In..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/In.W.144.128IEW

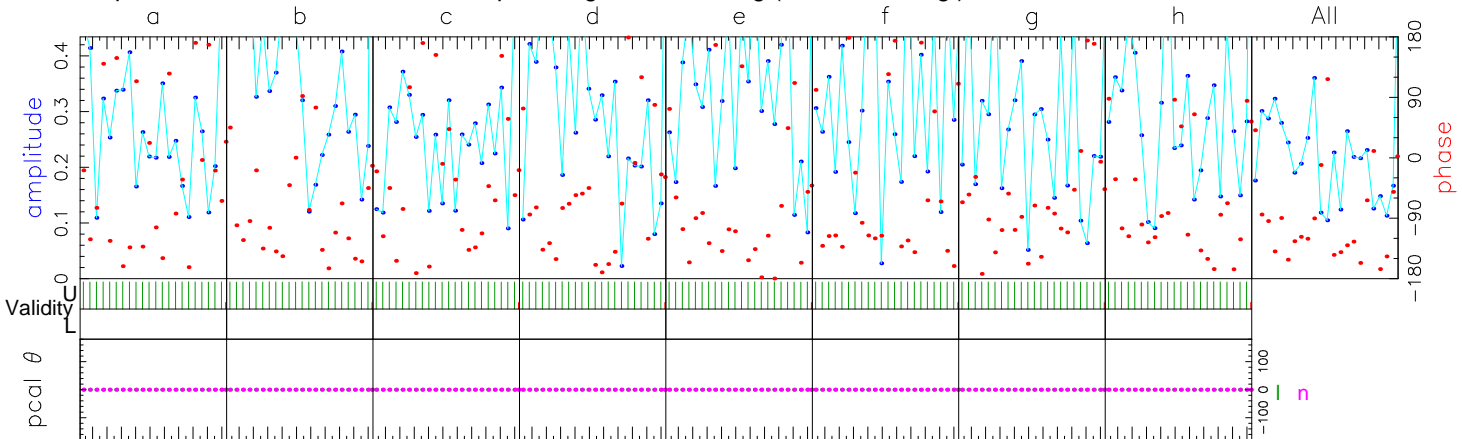
Mk4/DiFX fourfit 3.20 rev 0  
frontend

3C454\_3.128IEW, No0117, In  
VLBA\_LA - VLBA\_NL, fgroup W, pol RR



Fringe quality 9  
SNR 9.6  
Int time 582.146  
Amp 0.145  
Phase -110.7  
PFD 1.0e-12  
Delays (us)  
SBD -0.003868  
MBD -0.003066  
Fringe rate (Hz)  
-0.004233  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 091507.68  
Stop 092500.06  
FRT 092000.00  
Corr/FF/build  
2020:070:232021  
2020:071:145236  
2019:280:115849  
RA & Dec (J2000)  
22h53m57.747940s  
+16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec

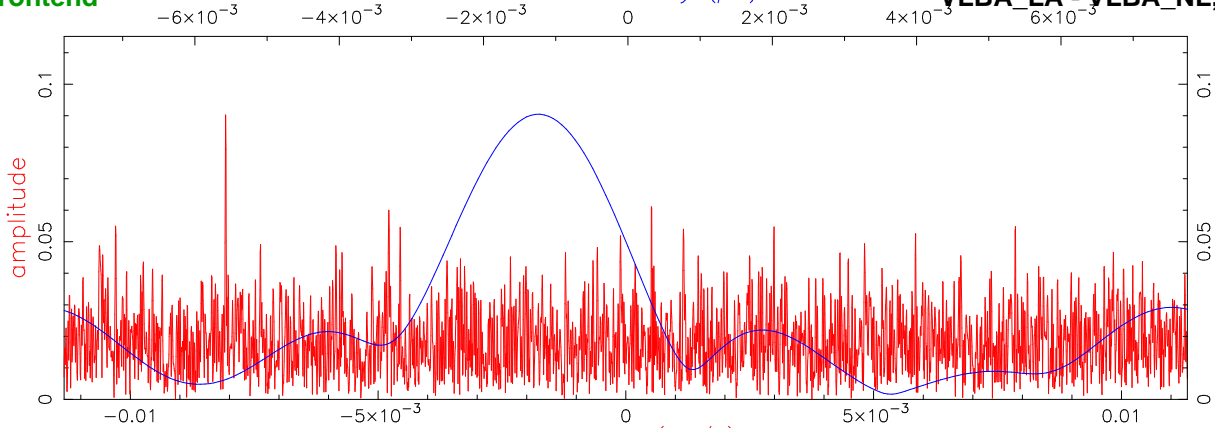


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-119.4	-95.6	-103.5	-104.3	-130.6	-141.1	-90.4	-96.7	Phase	-110.7
	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.1	Ampl.	0.1
	91.1	256.5	4.0	255.3	255.8	256.2	256.1	253.8	Sbd box	256.0
U/L	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0	APs used	
l	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
l:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
l:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
l	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
l	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	3.76743858164E+03		Apriori delay (usec)		3.76744164731E+03		Resid mbdelay (usec)		-3.06568E-03	+/- 1.1E-04
Sband delay (usec)	3.76743777931E+03		Apriori clock (usec)		-2.7323353E+01		Resid sbdelay (usec)		-3.86800E-03	+/- 9.0E-04
Phase delay (usec)	3.76744164375E+03		Apriori clockrate (us/s)		-4.8569552E-07		Resid phdelay (usec)		-3.56844E-06	+/- 3.9E-07
Delay rate (us/s)	-1.01448176458E-03		Apriori rate (us/s)		-1.0144326222E-03		Resid rate (us/s)		-4.91424E-08	+/- 1.1E-09
Total phase (deg)	69.2		Apriori accel (us/s/s)		-2.27481581014E-05		Resid phase (deg)		-110.7	+/- 12.0

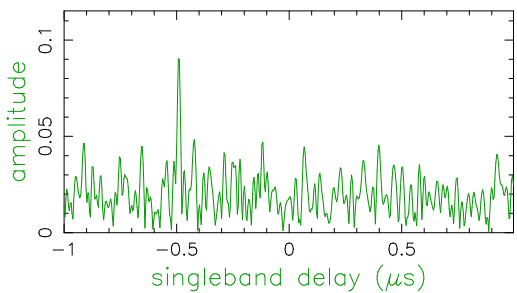
ph/seg (deg) 62.8 28.8 Search (4096X32) 0.144 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 72.4 50.2 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 19.7 17.0 Inc. seg. avg. 0.192 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 30.8 29.6 Inc. frq. avg. 0.146 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 268.3 el 30.9 pa 57.6 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -43.328 -1213.266 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/In..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/In.W.160.128IEW

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

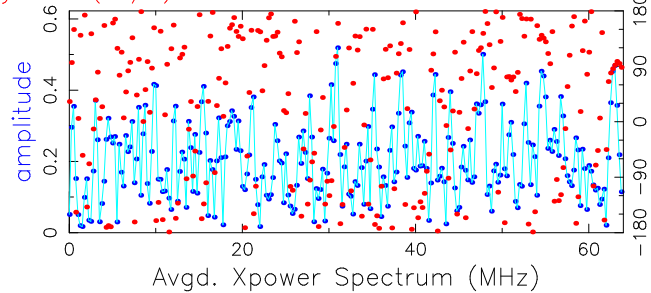
Fringe quality 0



SNR 6.1  
Int time 582.145  
Amp 0.115  
Phase -90.4  
PFD 4.2e-01  
Delays (us)  
SBD -0.490300  
MBD -0.001154  
Fringe rate (Hz)  
-0.696802  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512

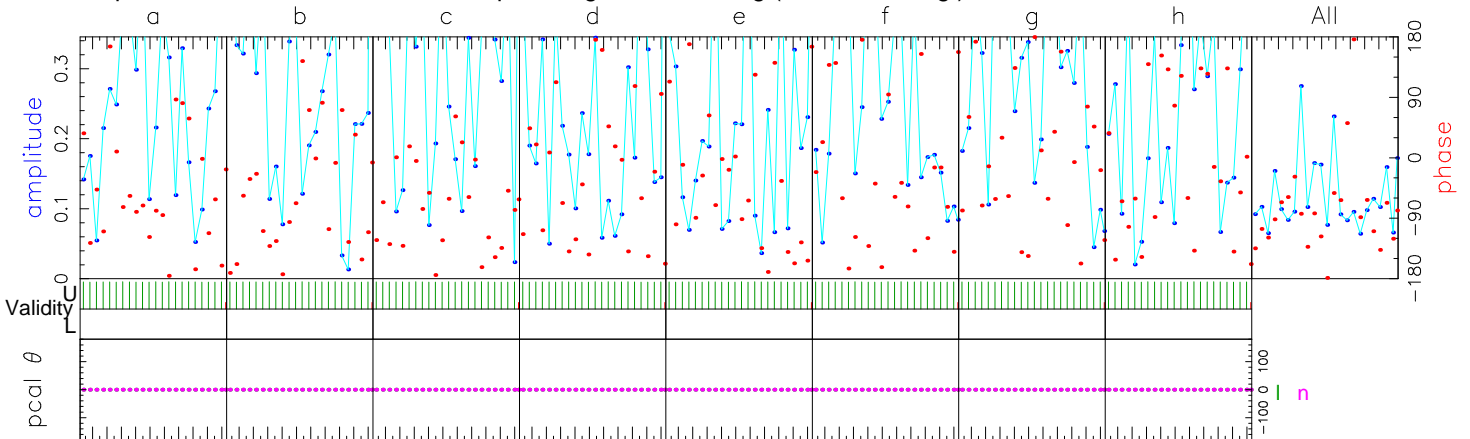


delay rate (ns/s)



Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 091507.68  
Stop 092500.06  
FRT 092000.00  
Corr/FF/build  
2020:070:232021  
2020:071:145245  
2019:280:115849  
RA & Dec (J2000)  
22h53m57.747940s  
+16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All		
U/L	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0				
l	1000	1000	1000	1000	1000	1000	1000	1000				
n	1000	1000	1000	1000	1000	1000	1000	1000				
l:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0				
l:n	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				
n	1000	1000	1000	1000	1000	1000	1000	1000				
l	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL				
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR				
Group delay (usec)(sbd)	3.76695611846E+03		Apriori delay (usec)		3.76744164731E+03		Resid mbdelay (usec)		-1.15386E-03	+/- 1.8E-04		
Sband delay (usec)	3.76695134706E+03		Apriori clock (usec)		-2.7323353E+01		Resid sbdelay (usec)		-4.90300E-01	+/- 1.4E-03		
Phase delay (usec)	3.76744164440E+03		Apriori clockrate (us/s)		-4.8569552E-07		Resid phdelay (usec)		-2.91512E-06	+/- 6.1E-07		
Delay rate (us/s)	-1.02252179942E-03		Apriori rate (us/s)		-1.01443262222E-03		Resid rate (us/s)		-8.08918E-06	+/- 1.8E-09		
Total phase (deg)			89.5		Apriori accel (us/s/s)		-2.27481581014E-05		Resid phase (deg)		-90.4	+/- 18.8

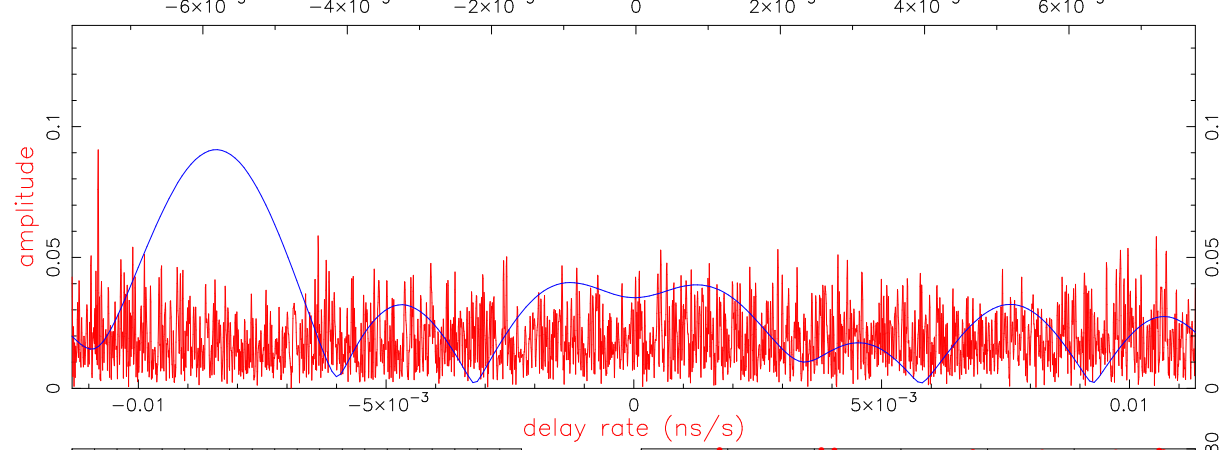
	RMS	Theor.	Amplitude	0.115 +/- 0.019	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	
ph/seg (deg)	49.7	45.0	Search (4096X32)	0.089	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000	
amp/seg (%)	63.3	78.5	Interp.	0.000	Bits/sample: 2x2	SampCntNorm: enabled	mb window (us) -0.008 0.008
ph/frq (deg)	16.6	26.5	Inc. seg. avg.	0.112	Sample rate(MISamp/s): 128		dr window (ns/s) -0.011 0.011
amp/frq (%)	38.0	46.3	Inc. frq. avg.	0.104	Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite
							ion window (TEC) 0.00 0.00

Mk4/DiFX fourfit 3.20 rev 0  
frontend

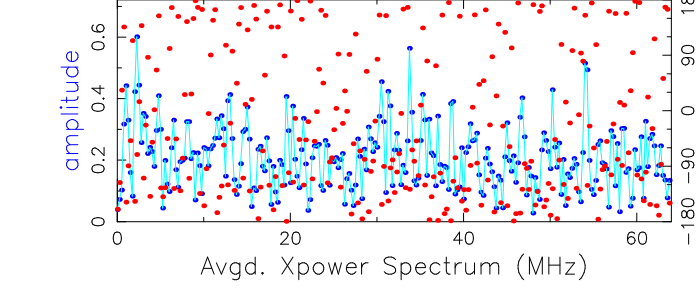
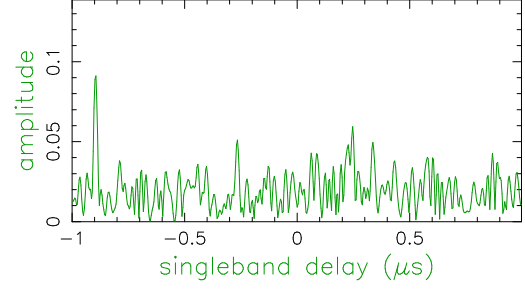
3C454\_3.128IEW, No0117, In  
VLBA\_LA - VLBA\_NL, fgroup W, pol RL

multiband delay ( $\mu$ s)

Fringe quality 0

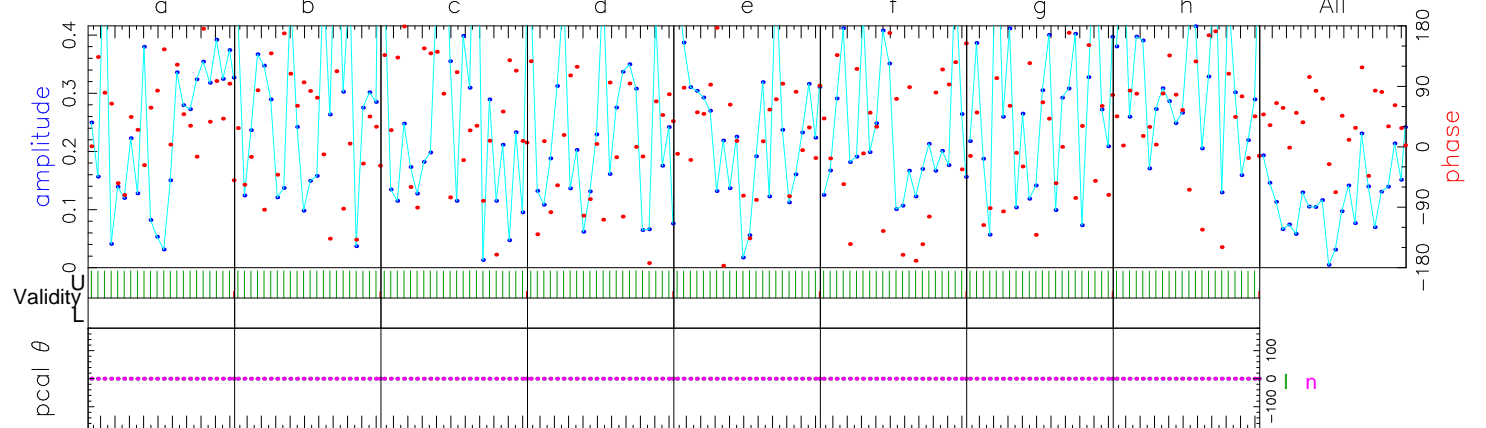


SNR 6.1  
Int time 582.146  
Amp 0.139  
Phase 50.1  
PFD 4.6e-01  
Delays (us)  
SBD -0.895940  
MBD -0.005855  
Fringe rate (Hz)  
-0.932812  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512



Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 091507.68  
Stop 092500.06  
FRT 092000.00  
Corr/FF/build  
2020:070:232021  
2020:071:145253  
2019:280:115849  
RA & Dec (J2000)  
22h53m57.747940s  
+16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec

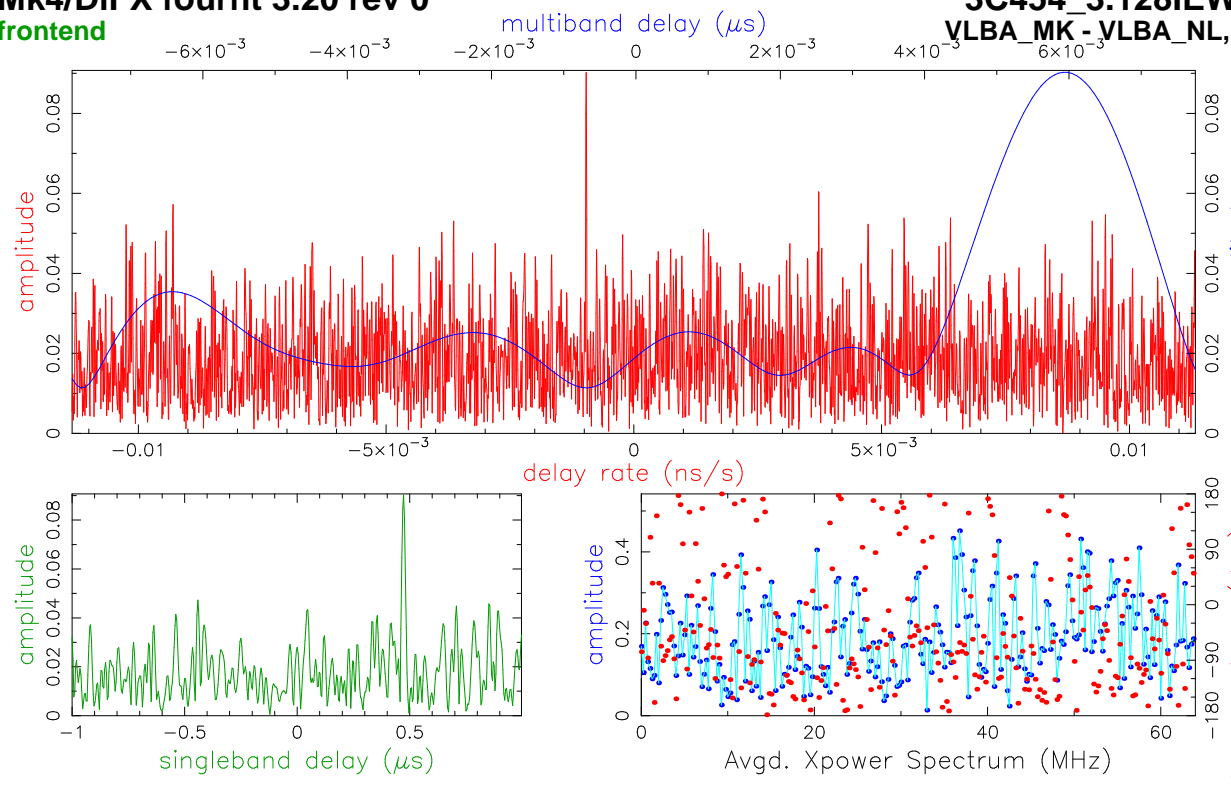


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0	1157/0		
l	1000	1000	1000	1000	1000	1000	1000	1000		
n	1000	1000	1000	1000	1000	1000	1000	1000		
l:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
l:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
l	1000	1000	1000	1000	1000	1000	1000	1000		
n	1000	1000	1000	1000	1000	1000	1000	1000		
l	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)		3.76654516695E+03				3.76744164731E+03			Resid mbdelay (usec)	-5.85537E-03 +/- 1.8E-04
Sband delay (usec)		3.76654570681E+03				-2.7323353E+01			Resid sbdelay (usec)	-8.95940E-01 +/- 1.4E-03
Phase delay (usec)		3.76744164893E+03				-4.8569552E-07			Resid phdelay (usec)	1.61528E-06 +/- 6.1E-07
Delay rate (us/s)		-1.02526164330E-03				-1.01443262222E-03			Resid rate (us/s)	-1.08290E-05 +/- 1.8E-09
Total phase (deg)			230.0			-2.27481581014E-05			Resid phase (deg)	50.1 +/- 18.8
ph/seg (deg)	RMS 45.9	Theor. 45.2	Amplitude 0.139 +/- 0.023						PCal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
amp/seg (%)	65.7	78.9	Search (4096X32) 0.088						PCal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
ph/frq (deg)	33.7	26.6	Interp. 0.000						Bits/sample: 2x2	SampCntNorm: enabled mb window (us) -0.008 0.008
amp/frq (%)	42.8	46.5	Inc. seg. avg. 0.134						Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
			Inc. frq. avg. 0.132						Data rate(Mb/s): 2048	nlags: 256 t_cohere infinite ion window (TEC) 0.00 0.00

l: az 268.3 el 30.9 pa 57.6 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -43.328 -1213.266 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/ln..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/ln.W.193.128IEW

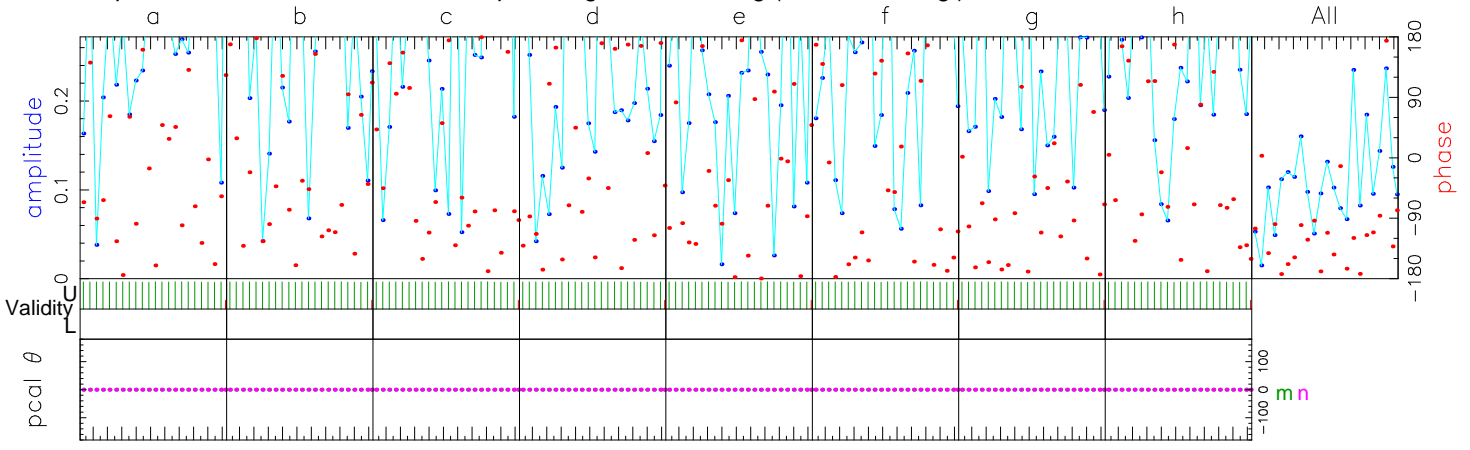
Mk4/DiFX fourfit 3.20 rev 0  
frontend

3C454\_3.128IEW, No0117, mn  
VLBA\_MK - VLBA\_NL, fgroup W, pol LL



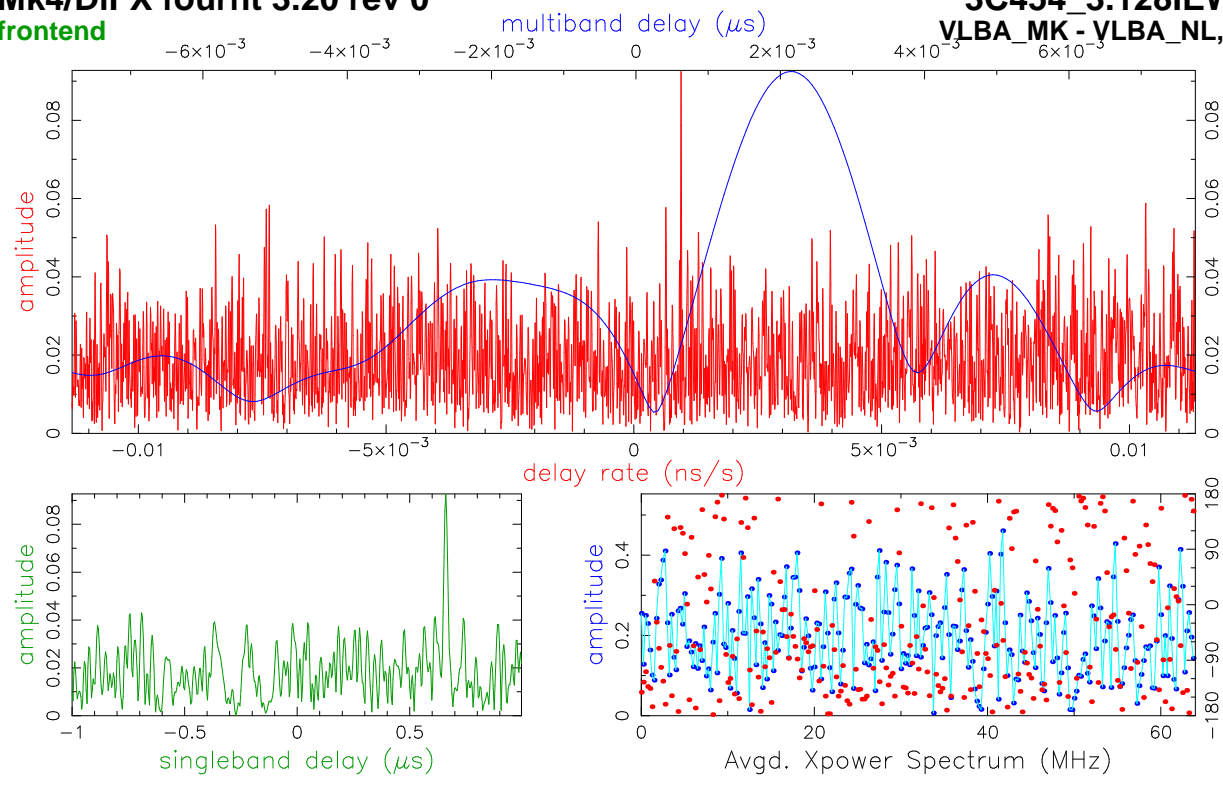
Fringe quality 0  
SNR 6.0  
Int time 584.473  
Amp 0.091  
Phase -130.7  
PFD 6.8e-01  
Delays (us)  
SBD 0.471970  
MBD 0.005900  
Fringe rate (Hz)  
-0.083038  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 091505.63  
Stop 092500.06  
FRT 092000.00  
Corr/FF/build  
2020:070:232021  
2020:071:145239  
2019:280:115849  
RA & Dec (J2000)  
22h53m57.747940s  
+16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



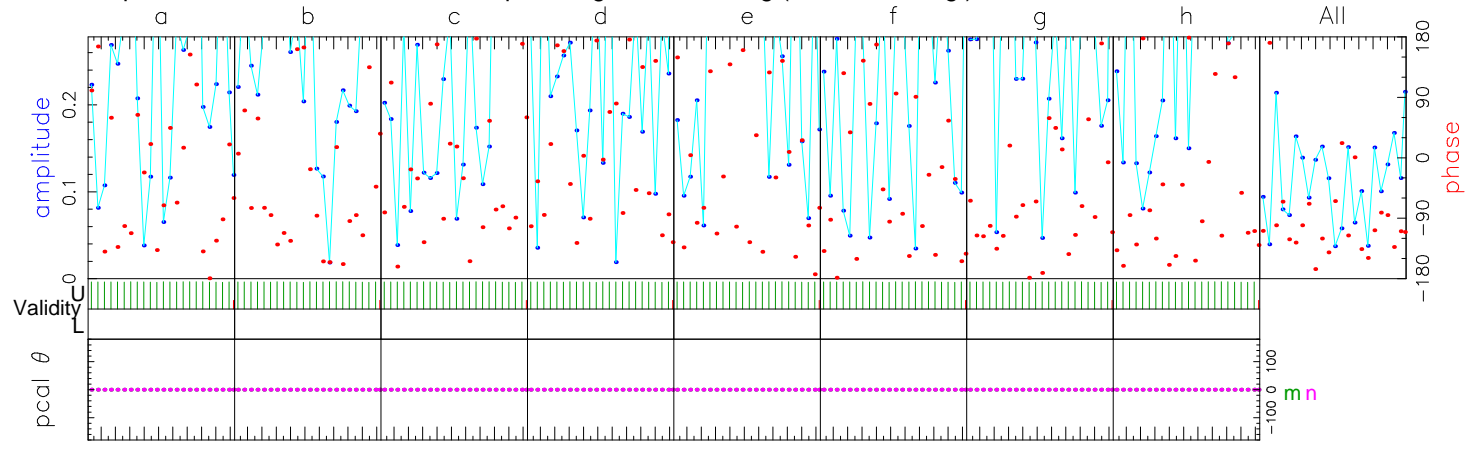
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-111.7	-117.2	-148.8	-126.7	-124.6	-156.4	-118.4	-103.6	Phase	-130.7
	0.0	0.1	0.1	0.1	0.0	0.2	0.1	0.1	Ampl.	0.1
	23.9	262.4	121.6	134.8	438.7	378.0	315.9	393.3	Sbd box	377.8
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	APs used	
m	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
m:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
m:n	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	
n	1000	1000	1000	1000	1000	1000	1000	1000		
m	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)		1.37706971732E+04				1.37702225231E+04			Resid mbdelay (usec)	5.90006E-03 +/- 1.8E-04
Sband delay (usec)		1.37706944934E+04				-2.3945595E+01			Resid sbdelay (usec)	4.71970E-01 +/- 1.4E-03
Phase delay (usec)		1.37702225189E+04				-1.4291580E-07			Resid phdelay (usec)	-4.21472E-06 +/- 6.2E-07
Delay rate (us/s)		7.17436042190E-01				7.17437006183E-01			Resid rate (us/s)	-9.63993E-07 +/- 1.8E-09
Total phase (deg)			-79.6			-8.36689221411E-05			Resid phase (deg)	-130.7 +/- 19.2

ph/seg (deg) 47.5 45.9 Amplitude 0.091 +/- 0.015 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 64.1 80.2 Search (4096X32) 0.089 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 20.3 27.1 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 48.2 47.3 Inc. seg. avg. 0.085 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 257.4 el 76.2 pa 73.5 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -4460.254 -4661.686 ion window (TEC) 0.00 0.00 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/mn..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/mn.W.164.128IEW



Fringe quality 0  
 SNR 6.1  
 Int time 584.472  
 Amp 0.093  
 Phase -110.7  
 PFD 4.0e-01  
 Delays (us)  
 SBD 0.660066  
 MBD 0.002149  
 Fringe rate (Hz) 0.082214  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091505.63  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145247  
 2019:280:115849  
 RA & Dec (J2000)  
 22h53m57.747940s  
 +16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-134.5	-101.0	-87.4	-102.0	-156.7	-114.8	-88.0	-114.8	Phase	-110.7
	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	Ampl.	0.1
	251.2	298.9	383.0	383.7	200.0	74.2	510.2	427.1	Sbd box	426.0
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	APs used	
m	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
m:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
m:n	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	
n	1000	1000	1000	1000	1000	1000	1000	1000		
m	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	1.37708809218E+04		Apriori delay (usec)		1.37702225231E+04		Resid mbdelay (usec)		2.14862E-03	+/- 1.8E-04
Sband delay (usec)	1.37708825891E+04		Apriori clock (usec)		-2.3945595E+01		Resid sbdelay (usec)		6.60066E-01	+/- 1.4E-03
Phase delay (usec)	1.37702225196E+04		Apriori clockrate (us/s)		-1.4291580E-07		Resid phdelay (usec)		-3.56821E-06	+/- 6.0E-07
Delay rate (us/s)	7.17437960605E-01		Apriori rate (us/s)		7.17437006183E-01		Resid rate (us/s)		9.54422E-07	+/- 1.8E-09
Total phase (deg)			Apriori accel (us/s/s)		-8.36689221411E-05		Resid phase (deg)		-110.7	+/- 18.7

ph/seg (deg) 47.7 44.9 Search (4096X32) 0.089 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 55.6 78.4 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 25.6 26.5 Inc. seg. avg. 0.085 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 42.1 46.3 Inc. frq. avg. 0.090 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 257.4 el 76.2 pa 73.5 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -4460.254 -4661.686 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/mn..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/mn.W.179.128IEW

# Mk4/DiFX fourfit 3.20 rev 0

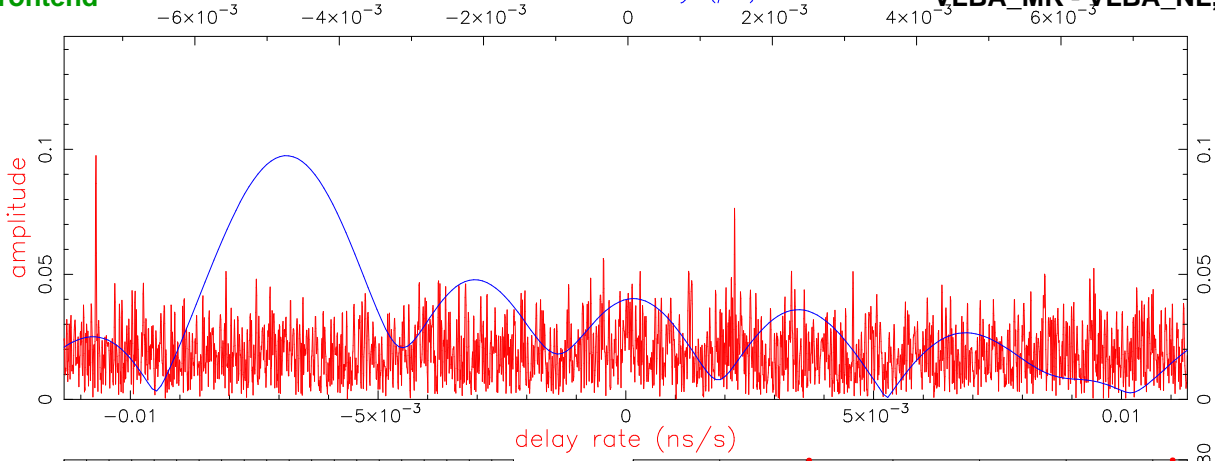
frontend

# 3C454\_3.128IEW, No0117, mn

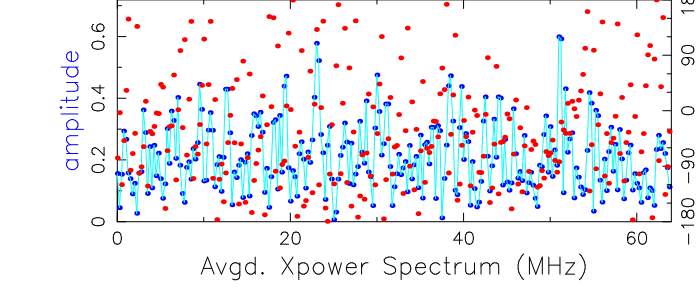
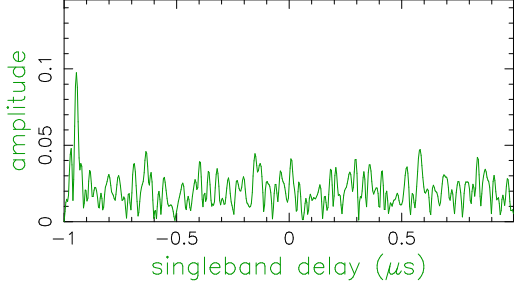
VLBA\_MK - VLBA\_NL, fgroup W, pol LR

multiband delay ( $\mu$ s)

Fringe quality 0

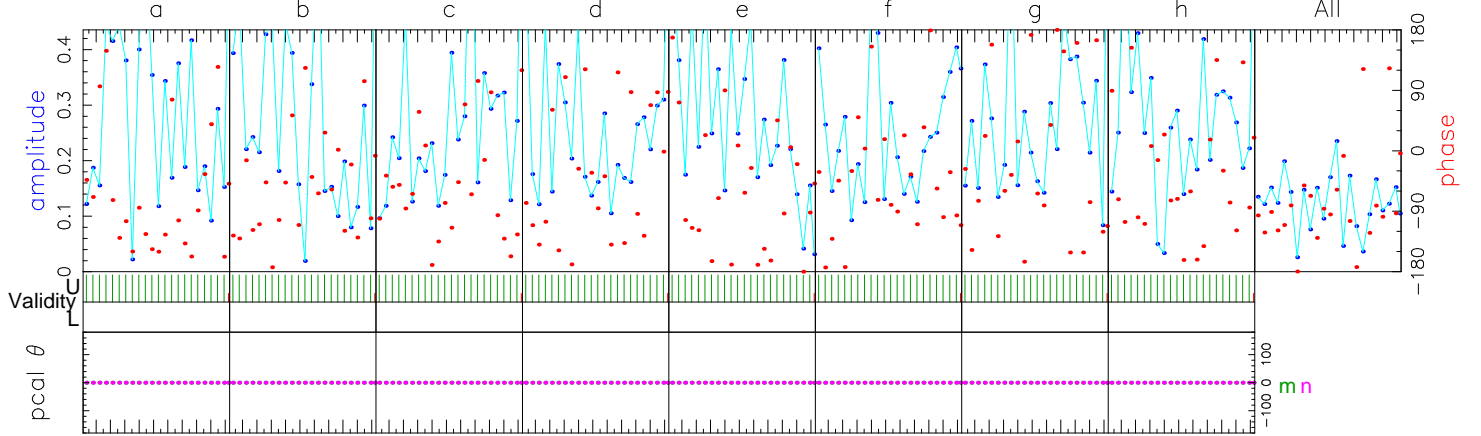


SNR 6.4  
 Int time 584.472  
 Amp 0.145  
 Phase -96.8  
 PFD 6.2e-02  
 Delays (us)  
 SBD -0.945429  
 MBD -0.004738  
 Fringe rate (Hz)  
 -0.922401  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091505.63  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145256  
 2019:280:115849  
 RA & Dec (J2000)  
 22h53m57.747940s  
 +16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-122.4	-77.4	-76.3	-94.8	-95.2	-77.7	-139.7	-94.3	Phase	-96.8
	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.2	Ampl.	0.1
	16.1	223.8	57.7	310.3	95.1	224.7	310.6	13.6	Sbd box	15.0
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	APs used	
m	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
m:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
m:n	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	
n	1000	1000	1000	1000	1000	1000	1000	1000		
m	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

Group delay (usec)(sbd) 1.37692802854E+04 Apriori delay (usec) 1.37702225231E+04 Resid mbdelay (usec) -4.73775E-03 +/- 1.7E-04  
 Sband delay (usec) 1.37692770939E+04 Apriori clock (usec) -2.3945595E+01 Resid sbdelay (usec) -9.45429E-01 +/- 1.3E-03  
 Phase delay (usec) 1.37702225200E+04 Apriori clockrate (us/s) -1.4291580E-07 Resid phdelay (usec) -3.12038E-06 +/- 5.7E-07  
 Delay rate (us/s) 7.17426298027E-01 Apriori rate (us/s) 7.17437006183E-01 Resid rate (us/s) -1.07082E-05 +/- 1.7E-09  
 Total phase (deg) -45.6 Apriori accel (us/s/s) -8.36689221411E-05 Resid phase (deg) -96.8 +/- 17.8

RMS Theor. Amplitude 0.145 +/- 0.023 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 ph/seg (deg) 56.5 42.6 Search (4096X32) 0.094 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 amp/seg (%) 59.2 74.4 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 ph/frq (deg) 24.7 25.1 Inc. seg. avg. 0.147 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 amp/frq (%) 34.4 43.9 Inc. frq. avg. 0.142 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00

m: az 257.4 el 76.2 pa 73.5 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -4460.254 -4661.686 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/mn..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/mn.W.200.128IEW

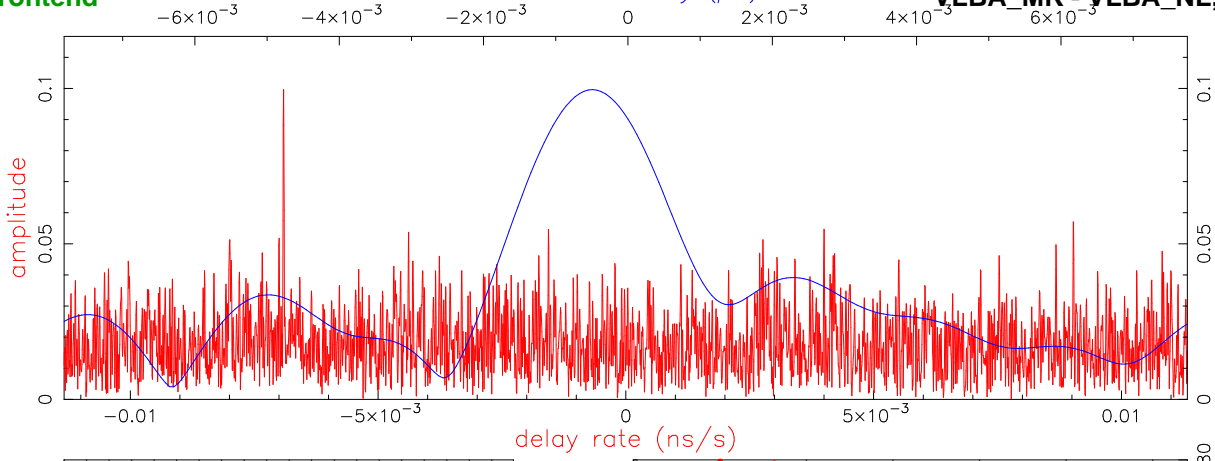
Mk4/DiFX fourfit 3.20 rev 0

frontend

3C454\_3.128IEW, No0117, mn

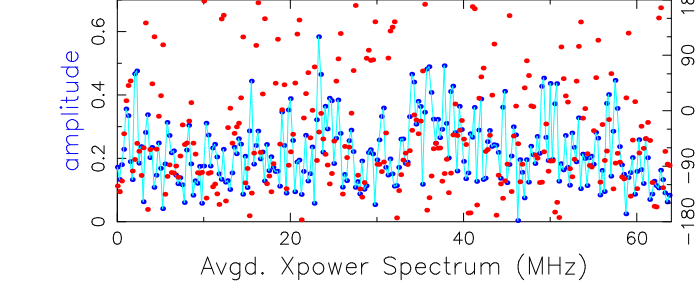
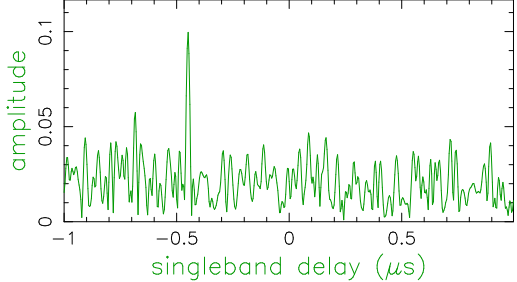
VLBA\_MK - VLBA\_NL, fgroup W, pol RL

multiband delay ( $\mu$ s)



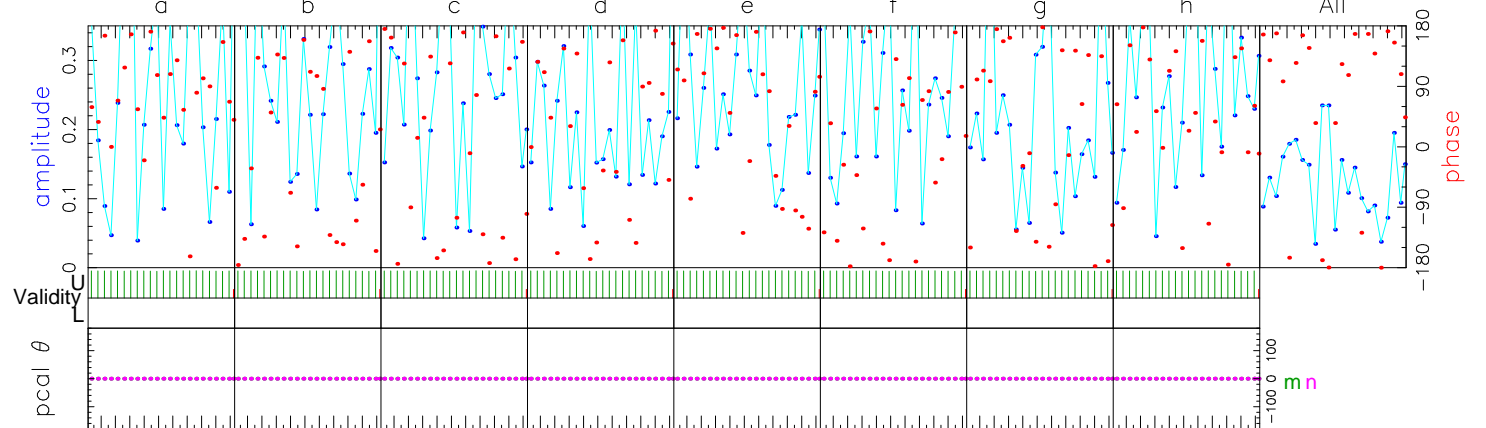
Fringe quality 0

SNR 6.6  
 Int time 584.473  
 Amp 0.117  
 Phase 153.1  
 PFD 2.5e-02  
 Delays (us)  
 SBD -0.449506  
 MBD -0.000494  
 Fringe rate (Hz)  
 -0.596014  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091505.63  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145304  
 2019:280:115849  
 RA & Dec (J2000)  
 22h53m57.747940s  
 +16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



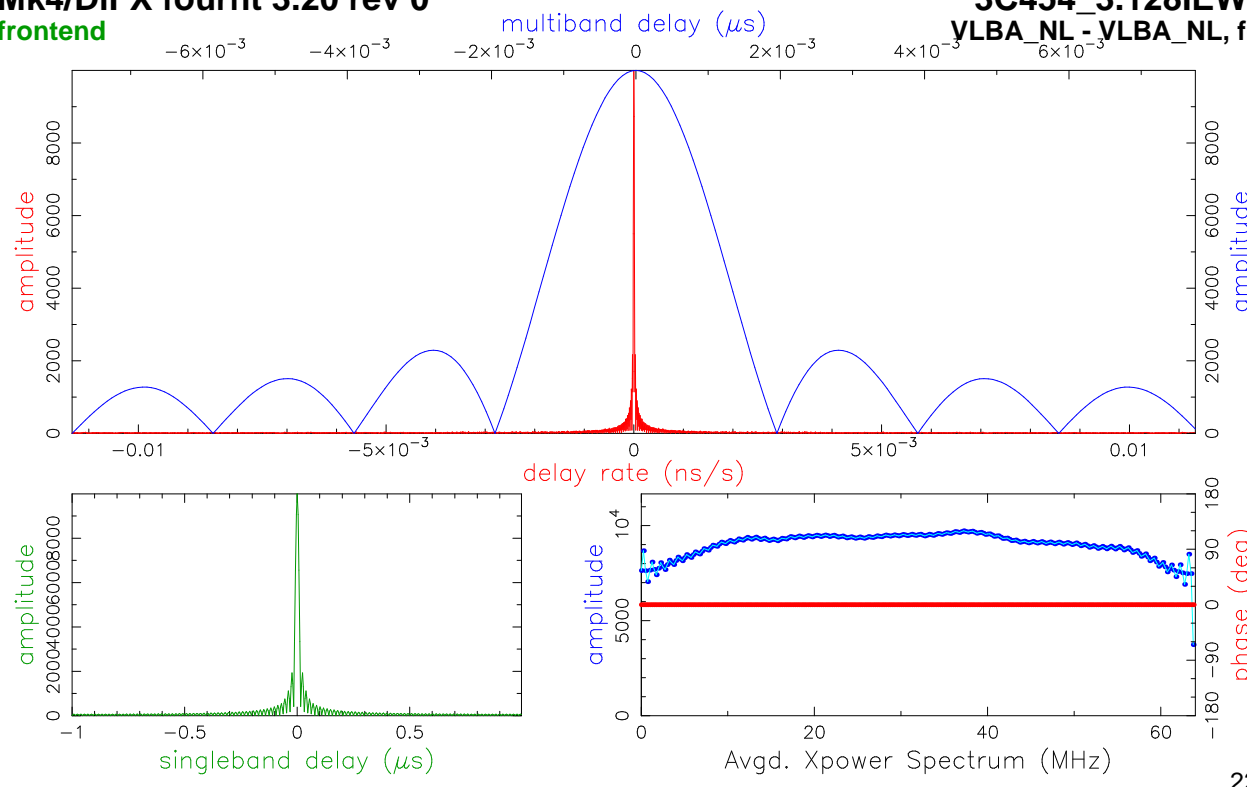
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	113.2	177.6	174.6	155.3	151.7	172.7	158.3	109.5	Phase	153.1
	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	Ampl.	0.1
	81.1	428.5	142.7	178.5	25.8	81.8	271.3	324.4	Sbd box	141.9
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	APs used	
m	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
m:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
m:n	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	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
m	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	1.37697689045E+04		Apriori delay (usec)		1.37702225231E+04		Resid mbdelay (usec)		-4.93610E-04	+/- 1.6E-04
Sband delay (usec)	1.37697730169E+04		Apriori clock (usec)		-2.3945595E+01		Resid sbdelay (usec)		-4.49506E-01	+/- 1.3E-03
Phase delay (usec)	1.37702225281E+04		Apriori clockrate (us/s)		-1.4291580E-07		Resid phdelay (usec)		4.93582E-06	+/- 5.6E-07
Delay rate (us/s)	7.17430087050E-01		Apriori rate (us/s)		7.17437006183E-01		Resid rate (us/s)		-6.91913E-06	+/- 1.6E-09
Total phase (deg)	204.2		Apriori accel (us/s/s)		-8.36689221411E-05		Resid phase (deg)		153.1	+/- 17.4

ph/seg (deg) 49.1 41.7 Search (4096X32) 0.099 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 62.6 72.8 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 28.8 24.6 Inc. seg. avg. 0.118 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 32.5 42.9 Inc. frq. avg. 0.118 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 257.4 el 76.2 pa 73.5 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -4460.254 -4661.686 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/mn..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/mn.W.219.128IEW



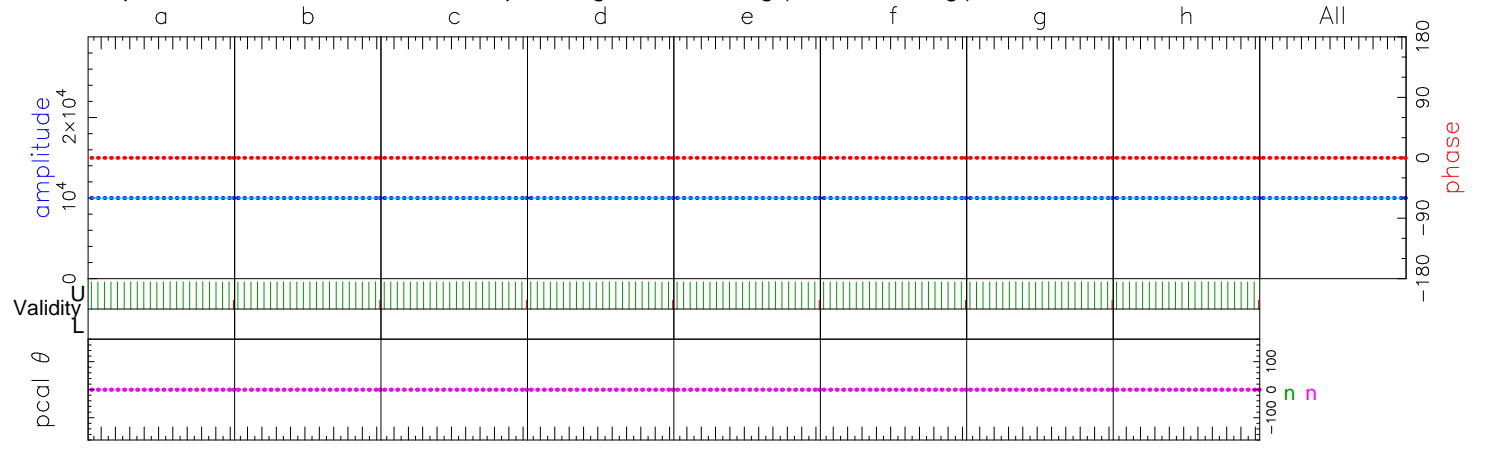
Mk4/DiFX fourfit 3.20 rev 0  
frontend

3C454\_3.128IEW, No0117, nn  
VLBA\_NL - VLBA\_NL, fgroup W, pol LL



Fringe quality 9  
SNR 661895.1  
Int time 585.846  
Amp 9999.995  
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 2020:070:232021  
FRT 092000.00  
2020:071:145242  
2019:280:115849  
RA & Dec (J2000) 22h53m57.747940s +16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec

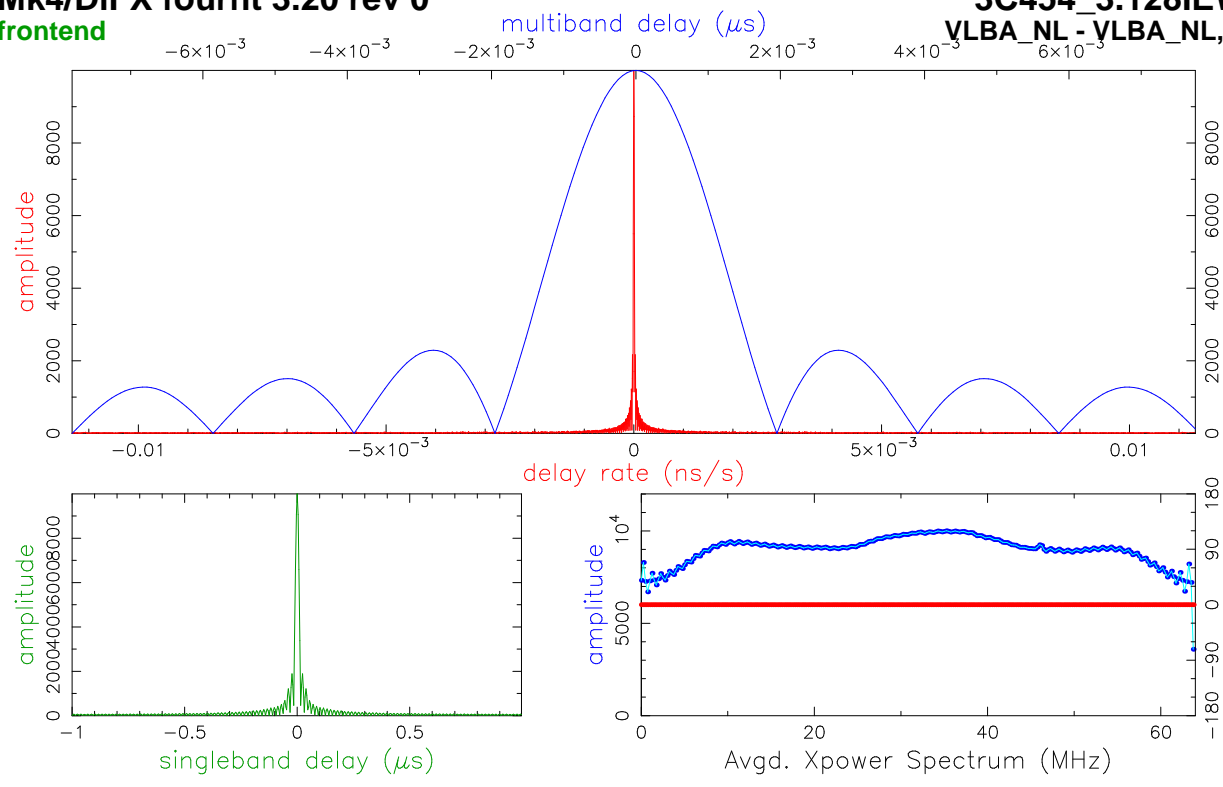


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0		
n	1000	1000	1000	1000	1000	1000	1000	1000		
n:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
n	1000	1000	1000	1000	1000	1000	1000	1000		
n	1000	1000	1000	1000	1000	1000	1000	1000		
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
n	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		
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		
Phase delay (usec)	3.25644489380E-20	3.25644489380E-20	3.25644489380E-20	3.25644489380E-20	3.25644489380E-20	3.25644489380E-20	3.25644489380E-20	3.25644489380E-20		
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		
Total phase (deg)			0.0							
RMS										
Theor.										
Amplitude										
Search (4096X32)										
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										
nlags: 256										
t_cohere infinite										
sb window (us)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
pcal θ										
n n										

n: az 274.6 el 19.6 pa 50.6      n: az 274.6 el 19.6 pa 50.6      u,v (fr/asec) 0.000 0.000      simultaneous interpolator  
Control file: cf\_1234\_gmva    Input file: /Exps/c192c/v1\_CygA2/1234/No0117/nn..128IEW    Output file: /Exps/c192c/v1\_CygA2/1234/No0117/nn.W.167.128IEW

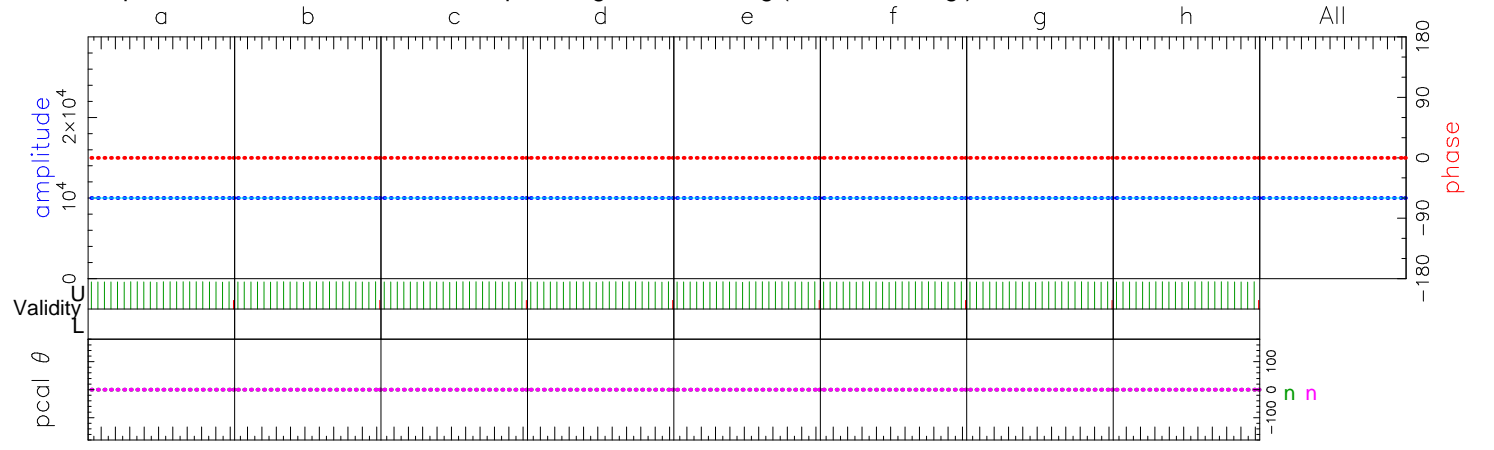
Mk4/DiFX fourfit 3.20 rev 0  
frontend

3C454\_3.128IEW, No0117, nn  
VLBA\_NL - VLBA\_NL, fgroup W, pol RR



Fringe quality 9  
SNR 661894.8  
Int time 585.845  
Amp 9999.995  
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  
Yr:day 2019:279  
Start 091505.63  
Stop 092500.06  
FRT 092000.00  
Corr/FF/build  
2020:070:232021  
2020:071:145249  
2019:280:115849  
RA & Dec (J2000) 22h53m57.747940s +16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0		
n	1000	1000	1000	1000	1000	1000	1000	1000	Ampl.	10000.0
n:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Sbd box	257.0
n:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	APs used	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC phase	
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Mani PC	
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	PC amp	
									Chan ids	
									Tracks	
									Tracks	
Group delay (usec)(sbd)	0.000000000000E+00								Resid mbdelay (usec)	0.00000E+00 +/- 1.6E-09
Sband delay (usec)	0.000000000000E+00								Resid sbdelay (usec)	0.00000E+00 +/- 1.3E-08
Phase delay (usec)	4.39934372789E-20								Resid phdelay (usec)	4.39934E-20 +/- 5.6E-12
Delay rate (us/s)	0.000000000000E+00								Resid rate (us/s)	0.00000E+00 +/- 1.6E-14
Total phase (deg)		0.0							Resid phase (deg)	0.0 +/- 0.0

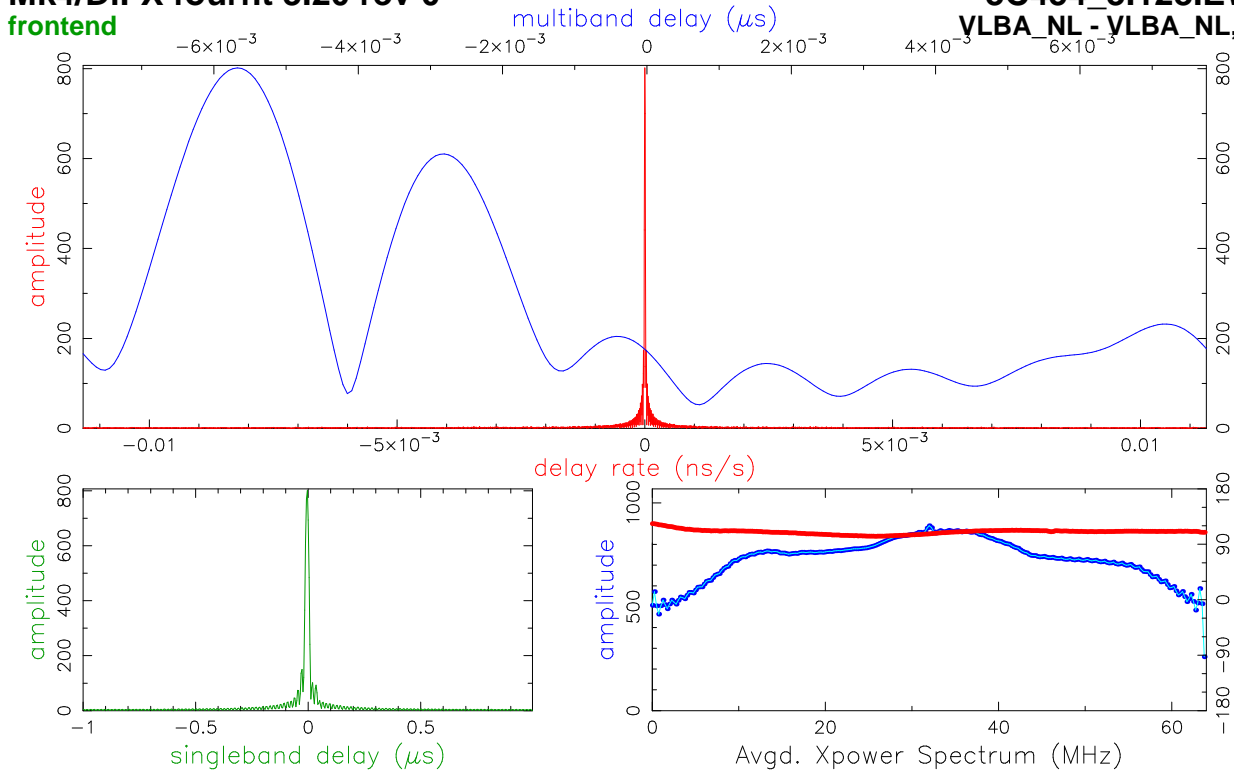
RMS Theor. Amplitude 9999.995 +/- 0.015 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 ph/seg (deg) 0.0 0.0 Search (4096X32) 9999.995 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 amp/seg (%) 0.0 0.0 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 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. 9999.995 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00  
 n: az 274.6 el 19.6 pa 50.6 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/nn..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/nn.W.186.128IEW

Mk4/DiFX fourfit 3.20 rev 0

frontend

3C454\_3.128IEW, No0117, nn

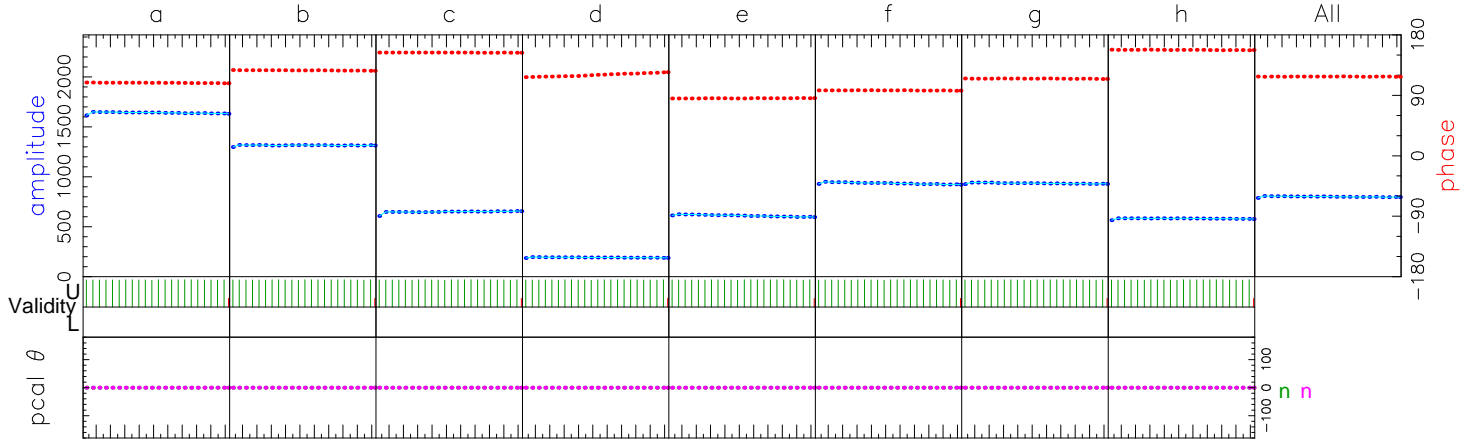
VLBA\_NL - VLBA\_NL, fgroup W, pol LR



Fringe quality 5

SNR 53428.0  
 Int time 585.846  
 Amp 807.196  
 Phase 117.8  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.005007  
 MBD -0.005696  
 Fringe rate (Hz) 0.000005  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091505.63  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145257  
 2019:280:115849  
 RA & Dec (J2000) 22h53m57.747940s +16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec

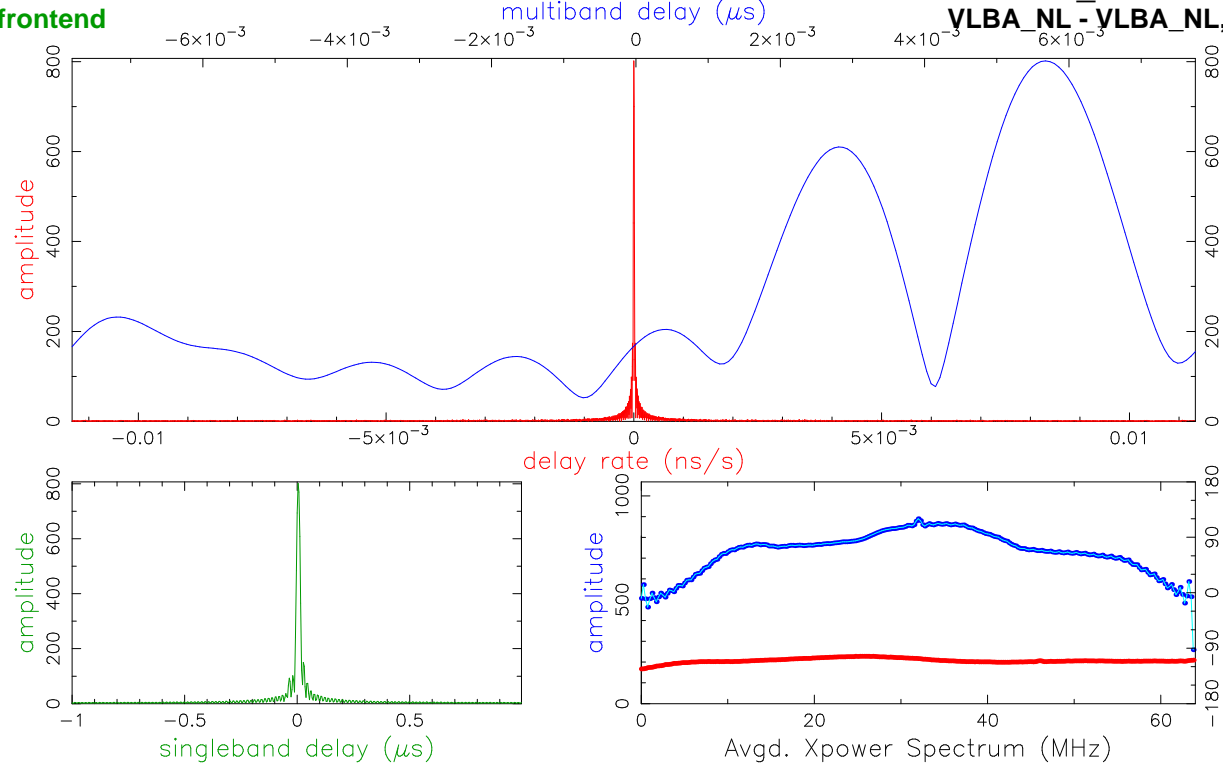


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0		
n	1000	1000	1000	1000	1000	1000	1000	1000	APs used	1000
n:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC freqs	1000
n:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	1000
n	1000	1000	1000	1000	1000	1000	1000	1000	Manl PC	1000
n	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	1000
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
Group delay (usec)(sbd)		-5.69609375000E-03				0.00000000000E+00			Resid mbdelay (usec)	-5.69609E-03 +/- 2.0E-08
Sband delay (usec)		-5.00750000000E-03				0.0000000E+00			Resid sbdelay (usec)	-5.00750E-03 +/- 1.6E-07
Phase delay (usec)		3.79915005880E-06				0.0000000E+00			Resid phdelay (usec)	3.79915E-06 +/- 6.9E-11
Delay rate (us/s)		5.77474459961E-11				0.00000000000E+00			Resid rate (us/s)	5.77474E-11 +/- 2.0E-13
Total phase (deg)			117.8			0.00000000000E+00			Resid phase (deg)	117.8 +/- 0.0

ph/seg (deg) 0.1 0.0 RMS Theor. Amplitude 807.196 +/- 0.015 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 0.9 0.0 Search (4096X32) 788.129 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 27.4 0.0 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 53.2 0.0 Inc. seg. avg. 801.444 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 n: az 274.6 el 19.6 pa 50.6 n: az 274.6 el 19.6 pa 50.6 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/No0117/nn..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/nn.W.206.128IEW simultaneous interpolator

Mk4/DiFX fourfit 3.20 rev 0  
frontend

3C454\_3.128IEW, No0117, nn  
VLBA\_NL - VLBA\_NL, fgroup W, pol RL

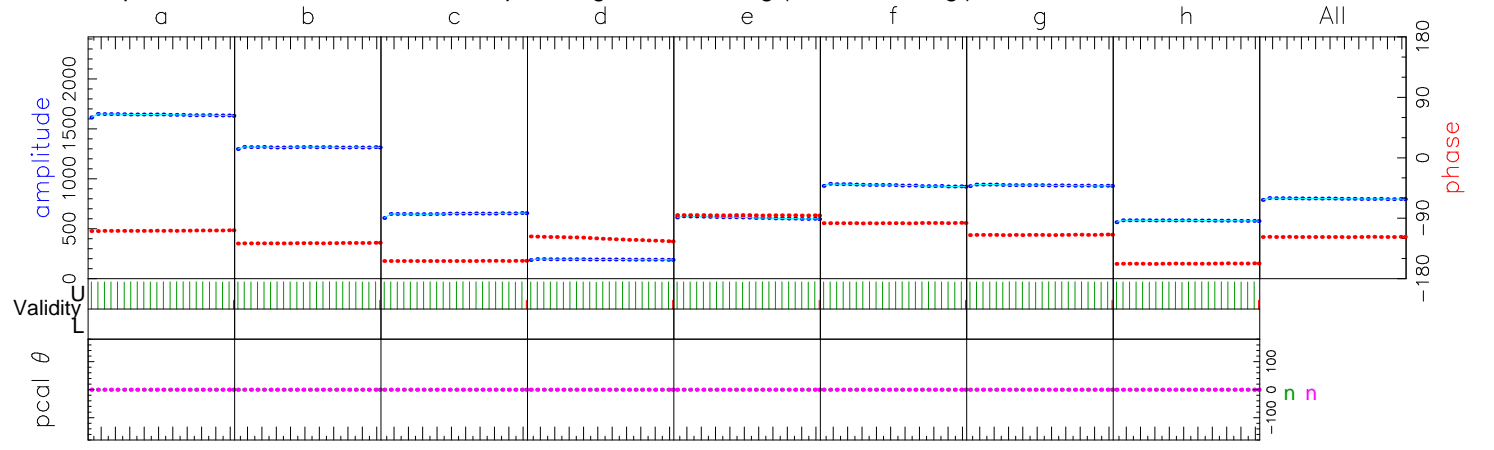


Fringe quality 5

SNR 53428.0  
Int time 585.845  
Amp 807.197  
Phase -117.8  
PFD 0.0e+00  
Delays (us)  
SBD 0.005007  
MBD 0.005696  
Fringe rate (Hz)  
-0.000005  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512

Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 091505.63  
Stop 092500.06  
FRT 092000.00  
Corr/FF/build  
2020:070:232021  
2020:071:145306  
2019:280:115849  
RA & Dec (J2000)  
22h53m57.747940s  
+16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec

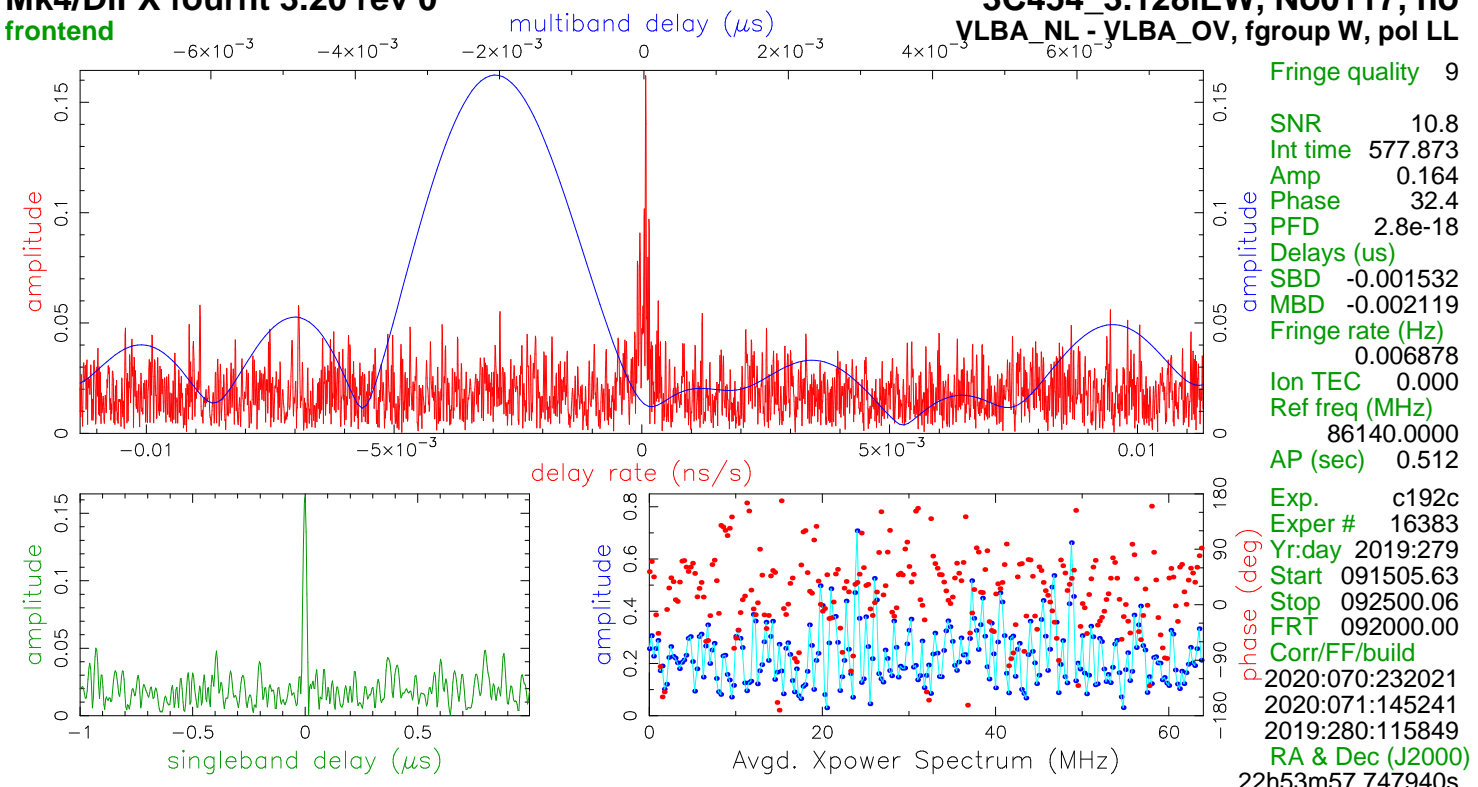


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-108.5	-127.1	-153.5	-120.3	-85.5	-97.2	-114.7	-157.5	Phase	-117.8
	1640.3	1315.4	649.5	192.9	611.4	935.1	935.2	582.3	Ampl.	857.8
	258.0	258.2	258.4	259.9	257.9	258.4	258.0	258.2	Sbd box	258.3
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	APs used	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
n:n	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	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	5.69609375000E-03		Apriori delay (usec)		0.0000000000E+00		Resid mbdelay (usec)		5.69609E-03	+/- 2.0E-08
Sband delay (usec)	5.00750000000E-03		Apriori clock (usec)		0.0000000E+00		Resid sbdelay (usec)		5.00750E-03	+/- 1.6E-07
Phase delay (usec)	-3.79915005875E-06		Apriori clockrate (us/s)		0.0000000E+00		Resid phdelay (usec)		-3.79915E-06	+/- 6.9E-11
Delay rate (us/s)	-5.77474459961E-11		Apriori rate (us/s)		0.00000000000E+00		Resid rate (us/s)		-5.77474E-11	+/- 2.0E-13
Total phase (deg)			Apriori accel (us/s/s)		0.00000000000E+00		Resid phase (deg)		-117.8	+/- 0.0

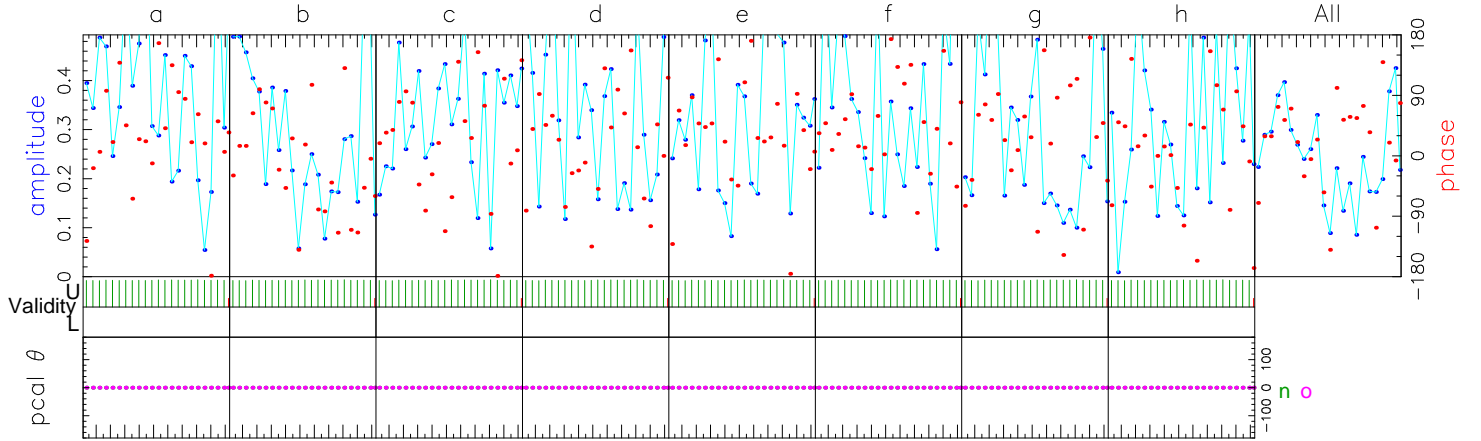
ph/seg (deg) 0.1 0.0 Theor. Amplitude 807.197 +/- 0.015 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 0.9 0.0 Interp. 788.130 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 27.4 0.0 Inc. seg. avg. 801.445 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 53.2 0.0 Inc. frq. avg. 857.772 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 274.6 el 19.6 pa 50.6 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/nn..1281EW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/nn.W.225.1281EW

Mk4/DiFX fourfit 3.20 rev 0  
 frontend

3C454\_3.1281EW, No0117, no  
 VLBA\_NL - VLBA\_OV, fgroup W, pol LL



Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec

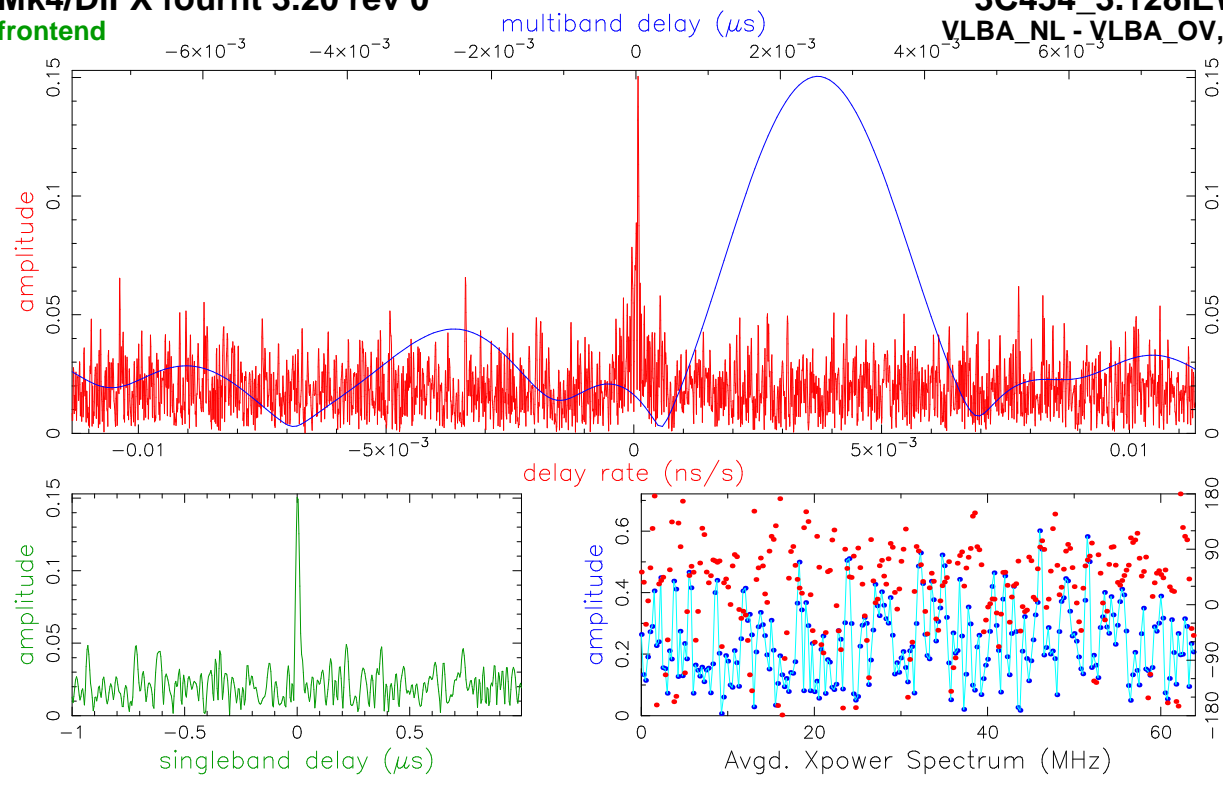


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	39.8	-0.3	41.2	12.7	44.1	44.8	43.8	22.6	Phase	32.4
	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.1	Ampl.	0.2
	257.3	257.0	208.6	256.3	256.8	256.8	256.4	256.4	Sbd box	256.6
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	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	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-6.69190238731E+03		Apriori delay (usec)		-6.69190026801E+03		Resid mbdelay (usec)		-2.11930E-03	+/- 1.0E-04
Sband delay (usec)	-6.69190180026E+03		Apriori clock (usec)		9.8736687E+00		Resid sbdelay (usec)		-1.53225E-03	+/- 8.0E-04
Phase delay (usec)	-6.69190026697E+03		Apriori clockrate (us/s)		1.3324251E-07		Resid phdelay (usec)		1.04605E-06	+/- 3.4E-07
Delay rate (us/s)	-1.48551285909E-01		Apriori rate (us/s)		-1.48551365757E-01		Resid rate (us/s)		7.98488E-08	+/- 1.0E-09
Total phase (deg)	1.3		Apriori accel (us/s/s)		3.75631105862E-05		Resid phase (deg)		32.4	+/- 10.6

ph/seg (deg) 66.4 25.4 Search (4096X32) 0.156 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 75.4 44.4 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 18.7 15.0 Inc. seg. avg. 0.224 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 21.2 26.2 Inc. frq. avg. 0.163 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 n: az 274.6 el 19.6 pa 50.6 o: az 259.3 el 40.4 pa 54.7 u,v (fr/asec) 967.109 1372.247 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/no..1281EW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/no.W.166.1281EW

Mk4/DiFX fourfit 3.20 rev 0  
frontend

3C454\_3.128IEW, No0117, no  
VLBA\_NL - VLBA\_OV, fgroup W, pol RR

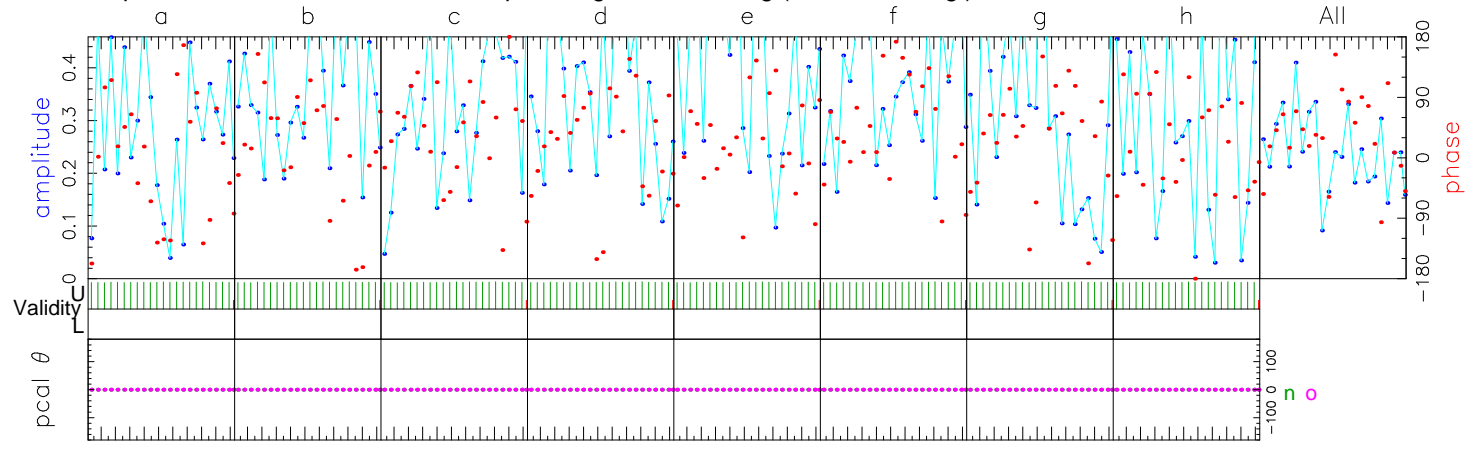


Fringe quality 9

SNR 10.1  
Int time 577.873  
Amp 0.153  
Phase 41.3  
PFD 7.4e-15  
Delays (us)  
SBD 0.001737  
MBD 0.002530  
Fringe rate (Hz) 0.006931  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512

Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 091505.63  
Stop 092500.06  
FRT 092000.00  
Corr/FF/build 2020:070:232021  
2020:071:145250  
2019:280:115849  
RA & Dec (J2000) 22h53m57.747940s +16°08'53.560909"

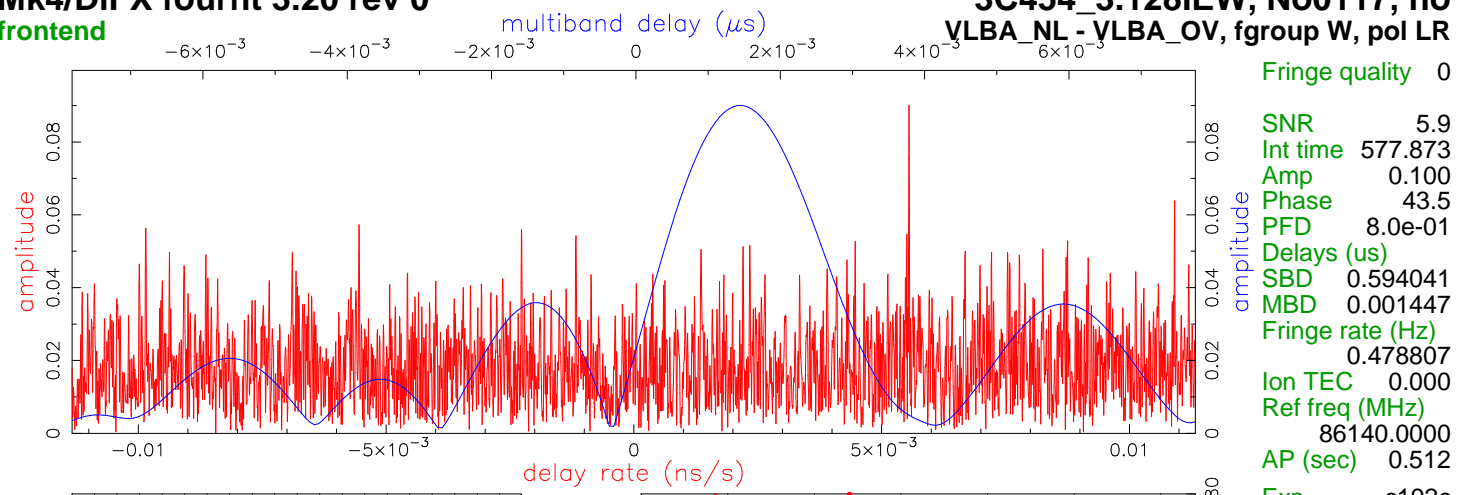
Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0		
n	1000	1000	1000	1000	1000	1000	1000	1000	APs used	1000
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	1000
n:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	0:0
n:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	0:0
n	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	1000
o	1000	1000	1000	1000	1000	1000	1000	1000		1000
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
Group delay (usec)(sbd)	-6.69189773822E+03		Apriori delay (usec)		-6.69190026801E+03		Resid mbdelay (usec)		2.52980E-03	+/- 1.1E-04
Sband delay (usec)	-6.69189853051E+03		Apriori clock (usec)		9.8736687E+00		Resid sbdelay (usec)		1.73750E-03	+/- 8.6E-04
Phase delay (usec)	-6.69190026668E+03		Apriori clockrate (us/s)		1.3324251E-07		Resid phdelay (usec)		1.33212E-06	+/- 3.7E-07
Delay rate (us/s)	-1.48551285298E-01		Apriori rate (us/s)		-1.48551365757E-01		Resid rate (us/s)		8.04596E-08	+/- 1.1E-09
Total phase (deg)	10.1		Apriori accel (us/s/s)		3.75631105862E-05		Resid phase (deg)		41.3	+/- 11.4
ph/seg (deg)	RMS 57.9	Theor. 27.3	Amplitude 57.9	0.153 +/- 0.015	Pcal mode: MANUAL, MANUAL		PC period (AP's) 5, 5		sb window (us)	-1.000 1.000
amp/seg (%)	76.5	47.7	Search (4096X32)	0.147	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		SampCntNorm: enabled		mb window (us)	-0.008 0.008
ph/frq (deg)	19.2	16.1	Interp.	0.000	Bits/sample: 2x2		Sample rate(MISamp/s): 128		dr window (ns/s)	-0.011 0.011
amp/frq (%)	23.1	28.1	Inc. seg. avg.	0.220	Data rate(Mb/s): 2048		nlags: 256 t_cohere infinite		ion window (TEC)	0.00 0.00
n: az 274.6 el 19.6 pa 50.6	o: az 259.3 el 40.4 pa 54.7		u, v (fr/asec) 967.109 1372.247						simultaneous interpolator	
Control file: cf_1234_gmva Input file: /Exps/c192c/v1_CygA2/1234/No0117/no..128IEW Output file: /Exps/c192c/v1_CygA2/1234/No0117/no.W.187.128IEW										

Mk4/DiFX fourfit 3.20 rev 0  
 frontend

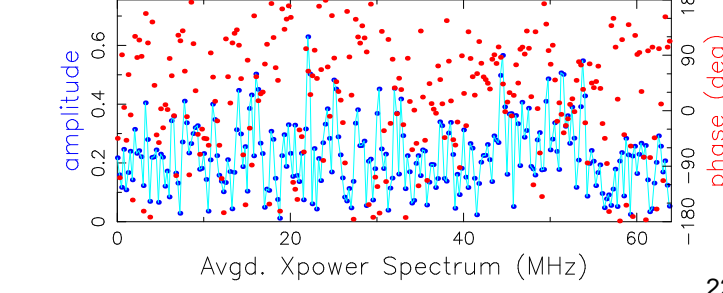
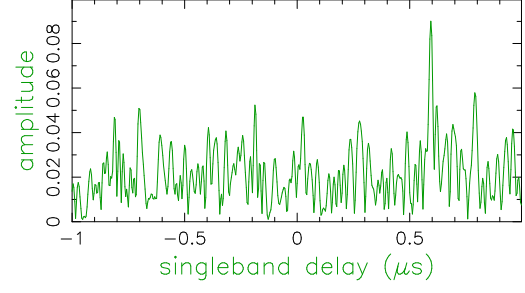
3C454\_3.128IEW, No0117, no  
 VLBA\_NL - VLBA\_OV, fgroup W, pol LR



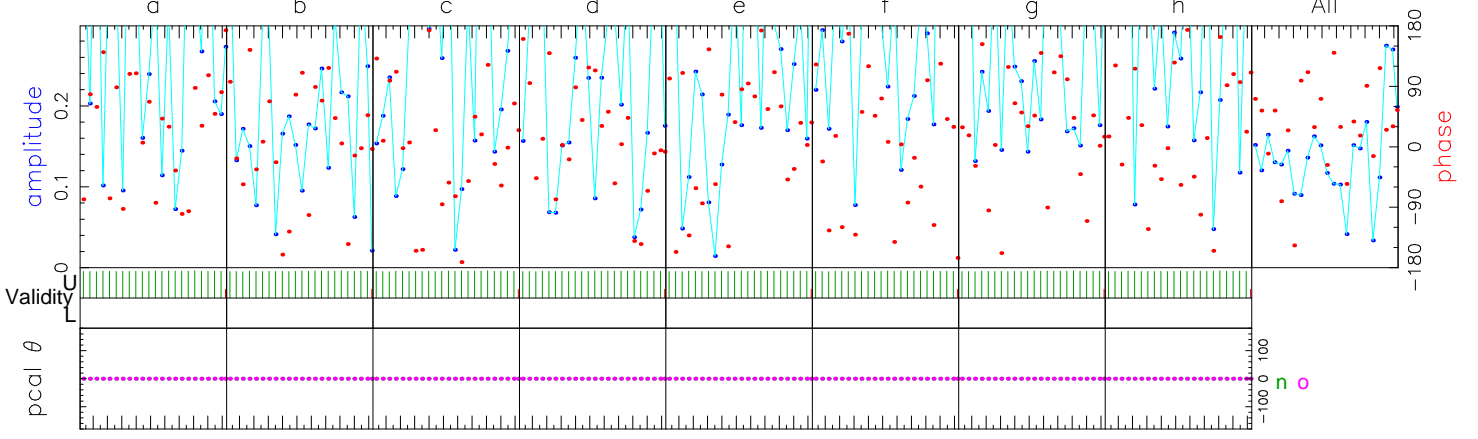
Fringe quality 0

SNR 5.9  
 Int time 577.873  
 Amp 0.100  
 Phase 43.5  
 PFD 8.0e-01  
 Delays (us)  
 SBD 0.594041  
 MBD 0.001447  
 Fringe rate (Hz)  
 0.478807  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091505.63  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145258  
 2019:280:115849  
 RA & Dec (J2000)  
 22h53m57.747940s  
 +16°08'53.560909"



Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec

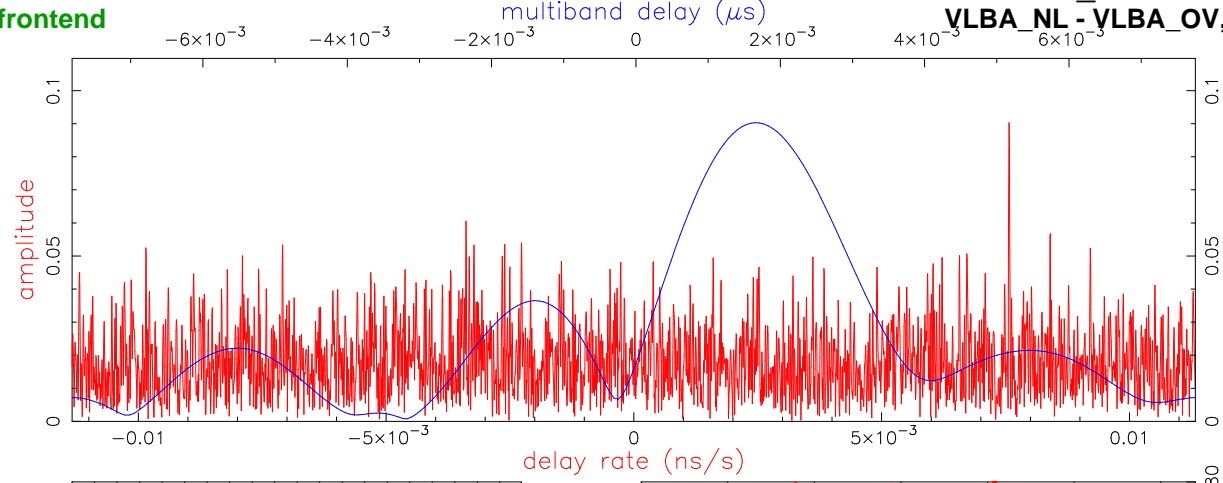


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0		
n	1000	1000	1000	1000	1000	1000	1000	1000	APs used	1000
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	1000
n:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	0:0
n:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	0:0
n	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	1000
o	1000	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	
Group delay (usec)(sbd)	-6.69130507141E+03		Apriori delay (usec)		-6.69190026801E+03		Resid mbdelay (usec)		1.44660E-03	+/- 1.8E-04
Sband delay (usec)	-6.69130622726E+03		Apriori clock (usec)		9.8736687E+00		Resid sbdelay (usec)		5.94041E-01	+/- 1.5E-03
Phase delay (usec)	-6.69190026661E+03		Apriori clockrate (us/s)		1.3324251E-07		Resid phdelay (usec)		1.40122E-06	+/- 6.2E-07
Delay rate (us/s)	-1.48545807278E-01		Apriori rate (us/s)		-1.48551365757E-01		Resid rate (us/s)		5.55848E-06	+/- 1.8E-09
Total phase (deg)			Apriori accel (us/s/s)		3.75631105862E-05		Resid phase (deg)		43.5	+/- 19.4

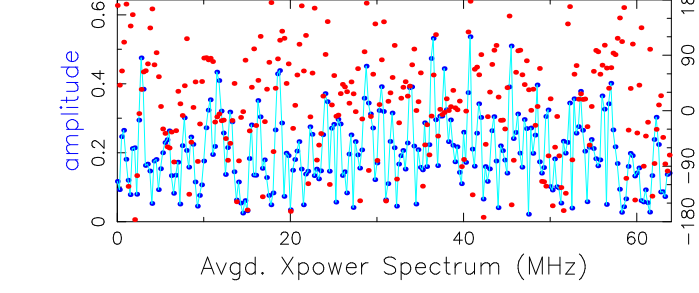
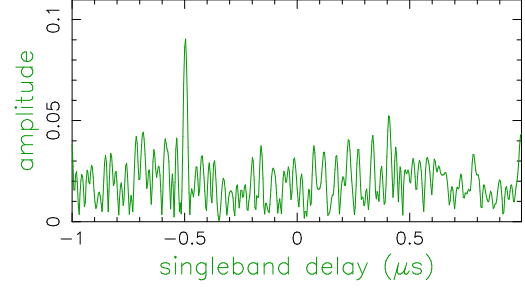
ph/seg (deg) 64.7 46.4 Search (4096X32) 0.088 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 81.3 81.0 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 23.0 27.4 Inc. seg. avg. 0.114 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 22.0 47.8 Inc. frq. avg. 0.095 Sample rate(MSamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 n: az 274.6 el 19.6 pa 50.6 o: az 259.3 el 40.4 pa 54.7 u,v (fr/asec) 967.109 1372.247 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/no..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/no.W.207.128IEW

Mk4/DiFX fourfit 3.20 rev 0  
 frontend

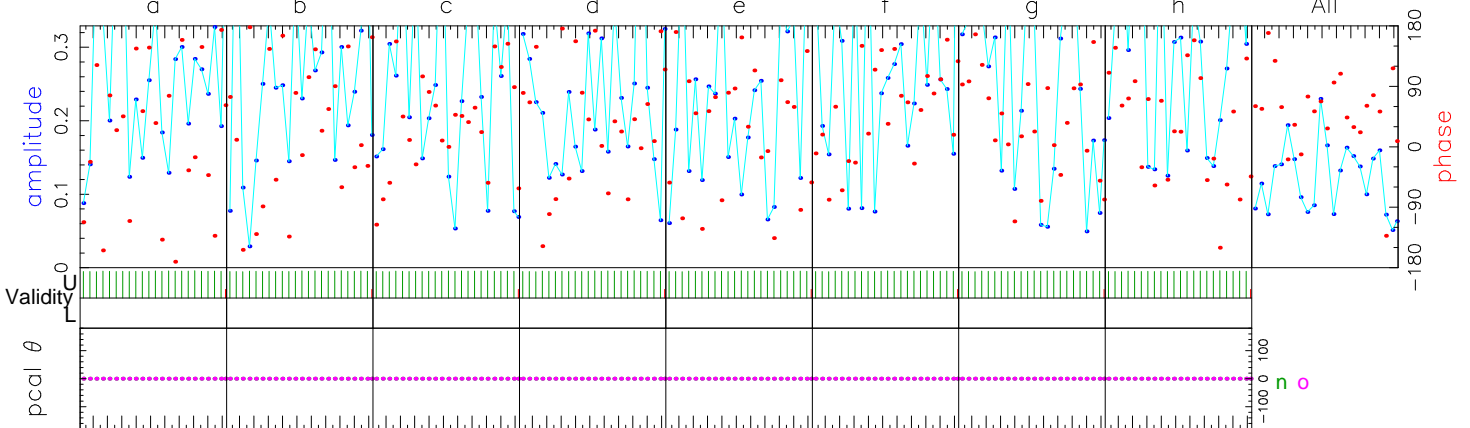
3C454\_3.128IEW, No0117, no  
 VLBA\_NL - VLBA\_OV, fgroup W, pol RL



Fringe quality 0  
 SNR 6.0  
 Int time 577.872  
 Amp 0.110  
 Phase 53.9  
 PFD 7.3e-01  
 Delays (us)  
 SBD -0.496924  
 MBD 0.001647  
 Fringe rate (Hz)  
 0.653241  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091505.63  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145307  
 2019:280:115849  
 RA & Dec (J2000)  
 22h53m57.747940s  
 +16°08'53.560909"



Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0		
n	1000	1000	1000	1000	1000	1000	1000	1000	APs used	1000
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	1000
n:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	0:0
n:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	0:0
n	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	1000
o	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)	-6.69239862069E+03	Apriori delay (usec)	-6.69190026801E+03	Resid mbdelay (usec)	1.64732E-03	+/-	1.8E-04
Sband delay (usec)	-6.69239719176E+03	Apriori clock (usec)	9.8736687E+00	Resid sbdelay (usec)	-4.96924E-01	+/-	1.4E-03
Phase delay (usec)	-6.69190026627E+03	Apriori clockrate (us/s)	1.3324251E-07	Resid phdelay (usec)	1.73921E-06	+/-	6.2E-07
Delay rate (us/s)	-1.48543782277E-01	Apriori rate (us/s)	-1.48551365757E-01	Resid rate (us/s)	7.58348E-06	+/-	1.8E-09
Total phase (deg)		Apriori accel (us/s/s)	3.75631105862E-05	Resid phase (deg)	53.9	+/-	19.2

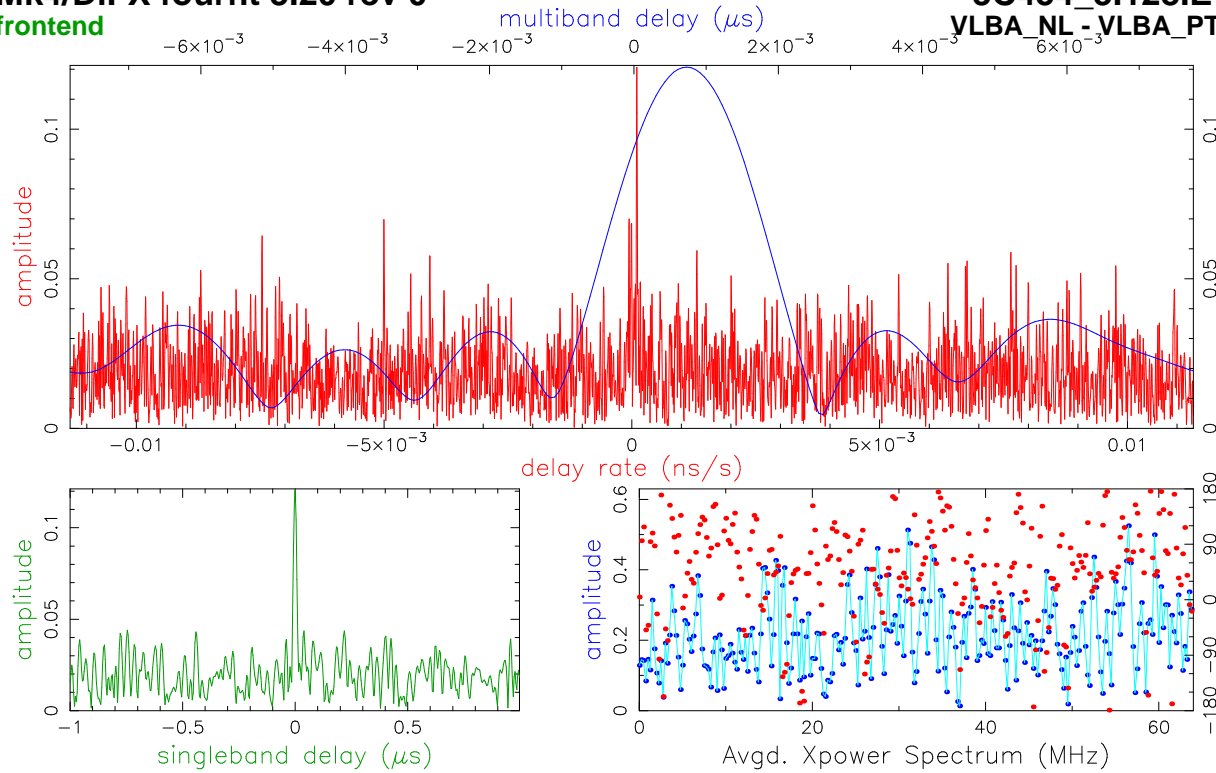
ph/seg (deg)	56.7	Theor.	46.1	Amplitude	0.110 +/- 0.018	Pcal mode: MANUAL, MANUAL	PC period (AP's)	5, 5	
amp/seg (%)	61.2	Search (4096X32)	0.090	Interp.	0.000	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000	
ph/frq (deg)	26.0	Inc. seg. avg.	0.113	Inc. frq. avg.	0.103	Bits/sample: 2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008
amp/frq (%)	33.9	Inc. frq. avg.	0.103			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		

n: az 274.6 el 19.6 pa 50.6 o: az 259.3 el 40.4 pa 54.7 u,v (fr/asec) 967.109 1372.247 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/no..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/no.W.228.128IEW



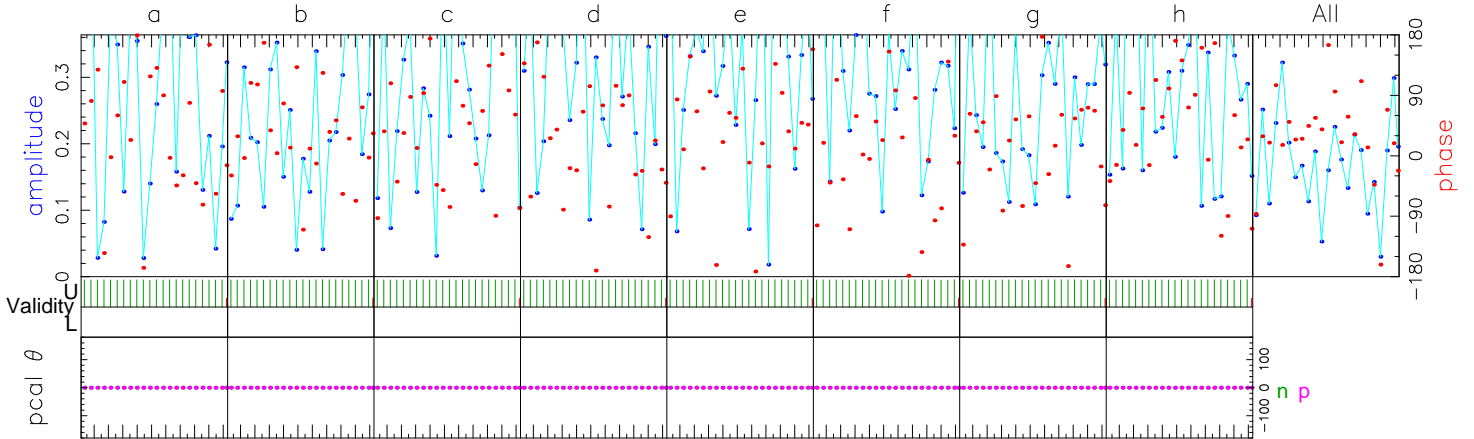
Mk4/DiFX fourfit 3.20 rev 0  
frontend

3C454\_3.128IEW, No0117, np  
VLBA\_NL - VLBA\_PT, fgroup W, pol LL



Fringe quality 9  
SNR 8.0  
Int time 585.248  
Amp 0.121  
Phase 42.9  
PFD 7.0e-07  
Delays (us)  
SBD -0.000914  
MBD 0.000691  
Fringe rate (Hz) 0.008360  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 091505.63  
Stop 092500.06  
FRT 092000.00  
Corr/FF/build  
2020:070:232021  
2020:071:145242  
2019:280:115849  
RA & Dec (J2000)  
22h53m57.747940s  
+16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0		
n	1000	1000	1000	1000	1000	1000	1000	1000	APs used	1000
p	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	1000
n:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	0:0
n:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	0:0
n	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	1000
p	1000	1000	1000	1000	1000	1000	1000	1000		
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
p	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd)	-4.27990448019E+03	Apriori delay (usec)	-4.27990517093E+03	Resid mbdelay (usec)	6.90743E-04	+/-	1.4E-04
Sband delay (usec)	-4.27990608543E+03	Apriori clock (usec)	1.4551687E+01	Resid sbdelay (usec)	-9.14500E-04	+/-	1.1E-03
Phase delay (usec)	-4.27990516955E+03	Apriori clockrate (us/s)	-6.9663080E-08	Resid phdelay (usec)	1.38331E-06	+/-	4.6E-07
Delay rate (us/s)	3.15422699240E-03	Apriori rate (us/s)	3.15412994516E-03	Resid rate (us/s)	9.70472E-08	+/-	1.3E-09
Total phase (deg)	-109.8	Apriori accel (us/s/s)	2.60690898482E-05	Resid phase (deg)	42.9	+/-	14.3

ph/seg (deg)	60.3	RMS	34.2	Theor.	Amplitude	0.121 +/- 0.015	Pcal mode: MANUAL, MANUAL	PC period (AP's)	5, 5		
amp/seg (%)	71.0	Search (4096X32)	0.115	Interp.	0.000	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000	1.000		
ph/frq (deg)	20.9	Inc. seg. avg.	0.145	Inc. frq. avg.	0.120	Bits/sample: 2x2	SampCntNorm: enabled	mb window (us)	-0.008	0.008	
amp/frq (%)	19.6	Inc. frq. avg.	0.120			Sample rate(MISamp/s): 128	dr window (ns/s)	-0.011	0.011		
n: az 274.6 el 19.6 pa 50.6		p: az 268.1 el 32.5 pa 59.3		u, v (fr/asec)	37.814 1468.221	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/No0117/np..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/np.W.168.128IEW simultaneous interpolator

Mk4/DiFX fourfit 3.20 rev 0

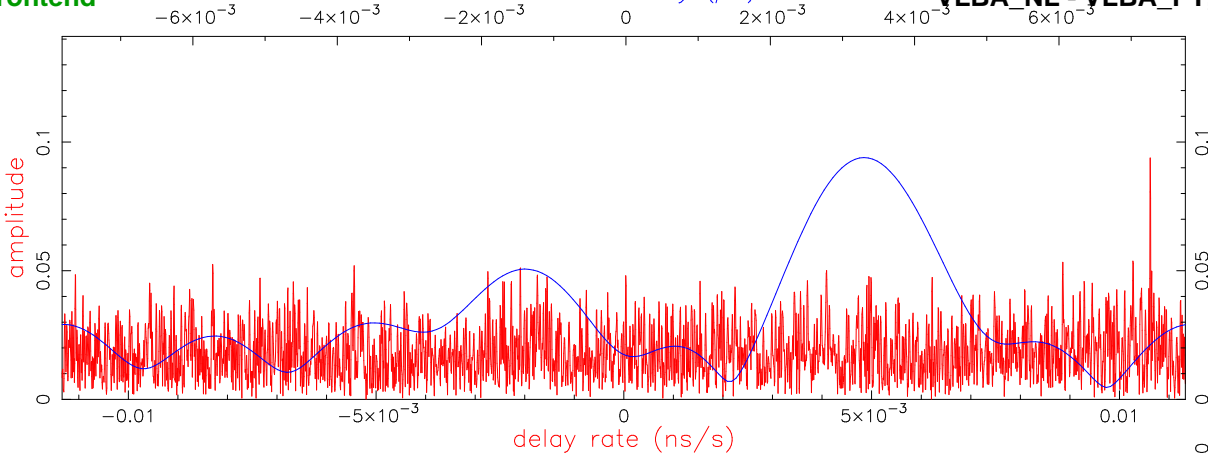
frontend

3C454\_3.128IEW, No0117, np

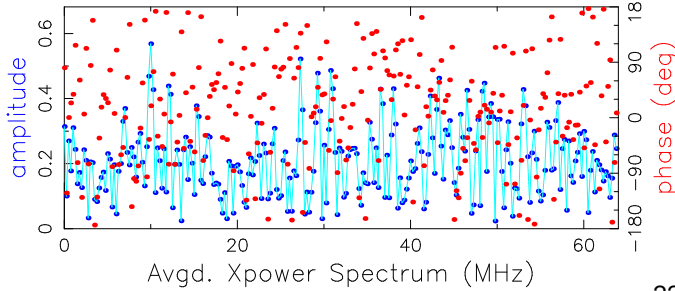
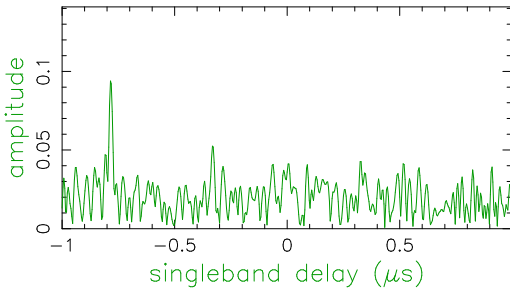
VLBA\_NL - VLBA\_PT, fgroup W, pol RR

multiband delay ( $\mu$ s)

Fringe quality 0

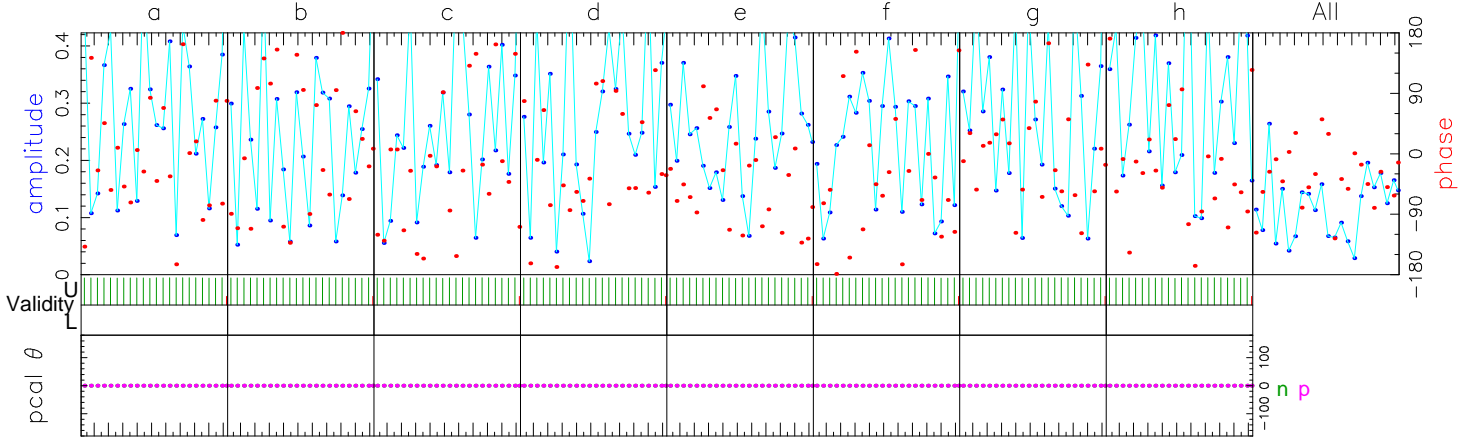


SNR 6.3  
 Int time 585.247  
 Amp 0.141  
 Phase -39.1  
 PFD 1.5e-01  
 Delays (us)  
 SBD -0.783612  
 MBD 0.003360  
 Fringe rate (Hz) 0.916648  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091505.63  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145250  
 2019:280:115849  
 RA & Dec (J2000)  
 22h53m57.747940s  
 +16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-26.7	2.8	-64.4	-23.0	-53.9	-82.4	-13.8	-47.6	Phase	-39.1
	0.2	0.0	0.1	0.2	0.2	0.1	0.2	0.2	Ampl.	0.1
	303.5	195.3	464.4	159.8	170.1	287.6	54.0	56.9	Sbd box	56.4
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	APs used	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
p	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
n:p	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	
p	1000	1000	1000	1000	1000	1000	1000	1000		
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
p	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

Group delay (usec)(sbd)	-4.28068306072E+03	Apriori delay (usec)	-4.27990517093E+03	Resid mbdelay (usec)	3.36022E-03	+/-	1.7E-04
Sband delay (usec)	-4.28068878293E+03	Apriori clock (usec)	1.4551687E+01	Resid sbdelay (usec)	-7.83612E-01	+/-	1.4E-03
Phase delay (usec)	-4.27990517219E+03	Apriori clockrate (us/s)	-6.9663080E-08	Resid phdelay (usec)	-1.26163E-06	+/-	5.9E-07
Delay rate (us/s)	3.16477131750E-03	Apriori rate (us/s)	3.15412994516E-03	Resid rate (us/s)	1.06414E-05	+/-	1.7E-09
Total phase (deg)	-191.8	Apriori accel (us/s/s)	2.60690898482E-05	Resid phase (deg)	-39.1	+/-	18.2

ph/seg (deg)	43.1	Theor.	43.6	Amplitude	0.141 +/- 0.022	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
amp/seg (%)	63.8	Search (4096X32)	0.091	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		sb window (us)	-1.000 1.000
ph/frq (deg)	30.6	Interp.	0.000	Bits/sample: 2x2		SampCntNorm: enabled	mb window (us) -0.008 0.008
amp/frq (%)	46.7	Inc. seg. avg.	0.136	Sample rate(MISamp/s): 128		dr window (ns/s)	-0.011 0.011
		Inc. frq. avg.	0.135	Data rate(Mb/s): 2048		ion window (TEC)	0.00 0.00

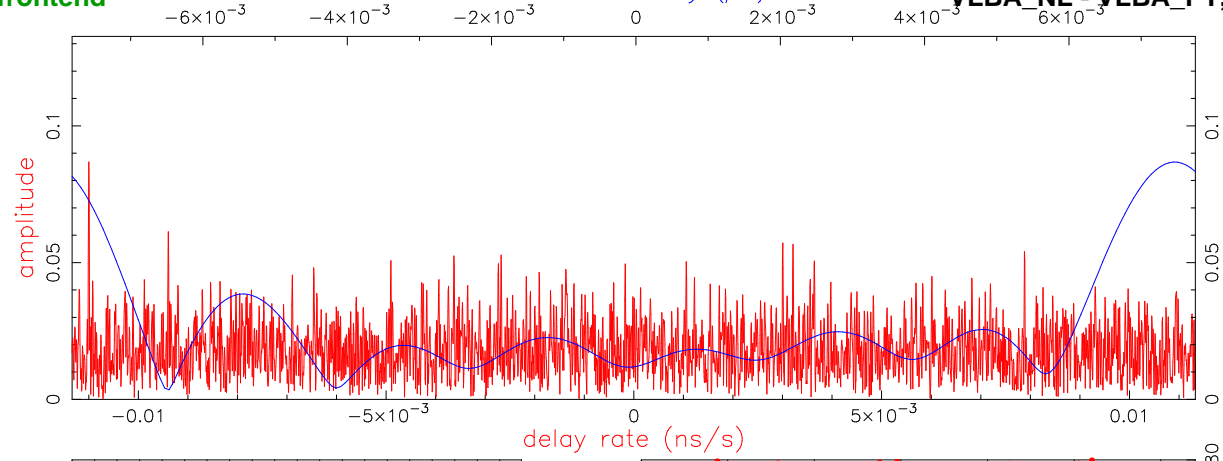
n: az 274.6 el 19.6 pa 50.6 p: az 268.1 el 32.5 pa 59.3 u,v (fr/asec) 37.814 1468.221 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/np..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/np.W.188.128IEW

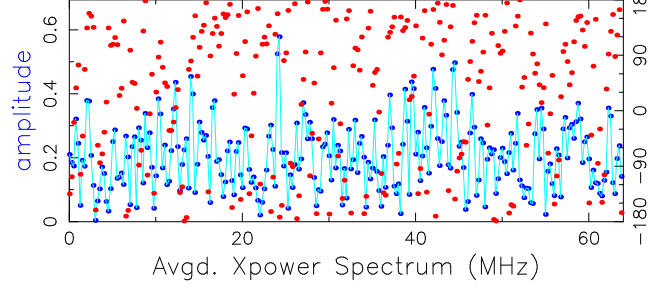
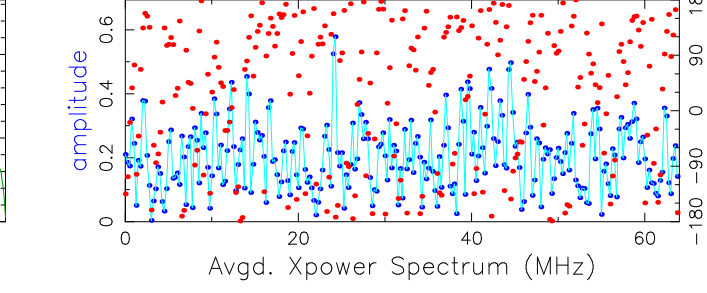
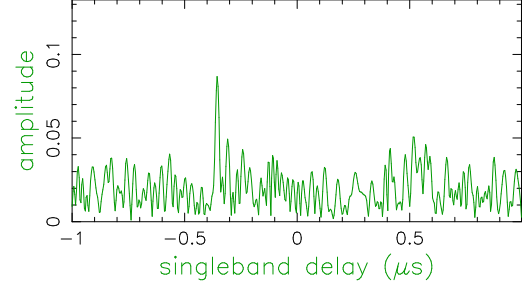
Mk4/DiFX fourfit 3.20 rev 0  
frontend

3C454\_3.128IEW, No0117, np  
VLBA\_NL - VLBA\_PT, fgroup W, pol LR

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

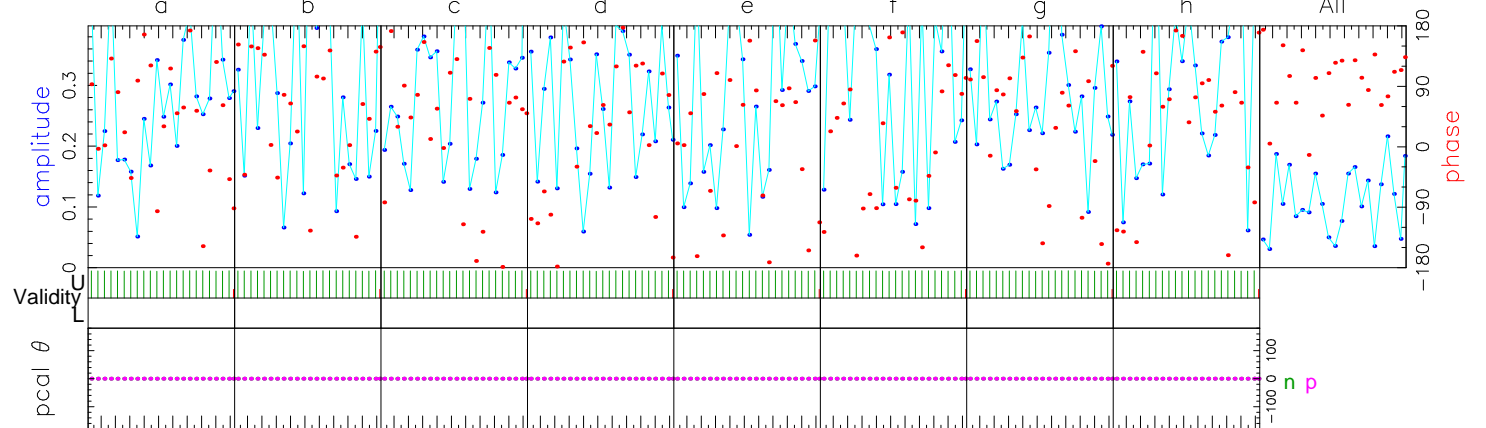


Fringe quality 0  
SNR 5.7  
Int time 585.248  
Amp 0.133  
Phase 93.7  
PFD 9.9e-01  
Delays (us)  
SBD -0.355062  
MBD -0.008149  
Fringe rate (Hz)  
-0.948915  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 091505.63  
Stop 092500.06  
FRT 092000.00  
Corr/FF/build  
2020:070:232021  
2020:071:145258  
2019:280:115849  
RA & Dec (J2000)  
22h53m57.747940s  
+16°08'53.560909"



Avgd. Xpower Spectrum (MHz)

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0		
n	1000	1000	1000	1000	1000	1000	1000	1000	APs used	
p	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
n:p	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	
p	1000	1000	1000	1000	1000	1000	1000	1000		
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
p	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
Group delay (usec)(sbd)	-4.28025707040E+03		Apriori delay (usec)		-4.27990517093E+03		Resid mbdelay (usec)		-8.14947E-03	+/- 1.9E-04
Sband delay (usec)	-4.28026023318E+03		Apriori clock (usec)		1.4551687E+01		Resid sbdelay (usec)		-3.55062E-01	+/- 1.5E-03
Phase delay (usec)	-4.27990516791E+03		Apriori clockrate (us/s)		-6.9663080E-08		Resid phdelay (usec)		3.02124E-06	+/- 6.4E-07
Delay rate (us/s)	3.14311397788E-03		Apriori rate (us/s)		3.15412994516E-03		Resid rate (us/s)		-1.10160E-05	+/- 1.9E-09
Total phase (deg)			Apriori accel (us/s/s)		2.60690898482E-05		Resid phase (deg)		93.7	+/- 19.9

ph/seg (deg) 44.8 47.8 Theor. Amplitude 0.133 +/- 0.023 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 65.9 83.5 Search (4096X32) 0.086 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 17.7 28.2 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 35.7 49.2 Inc. seg. avg. 0.123 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
n: az 274.6 el 19.6 pa 50.6 p: az 268.1 el 32.5 pa 59.3 u, v (fr/asec) 37.814 1468.221 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/np..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/np.W.208.128IEW simultaneous interpolator

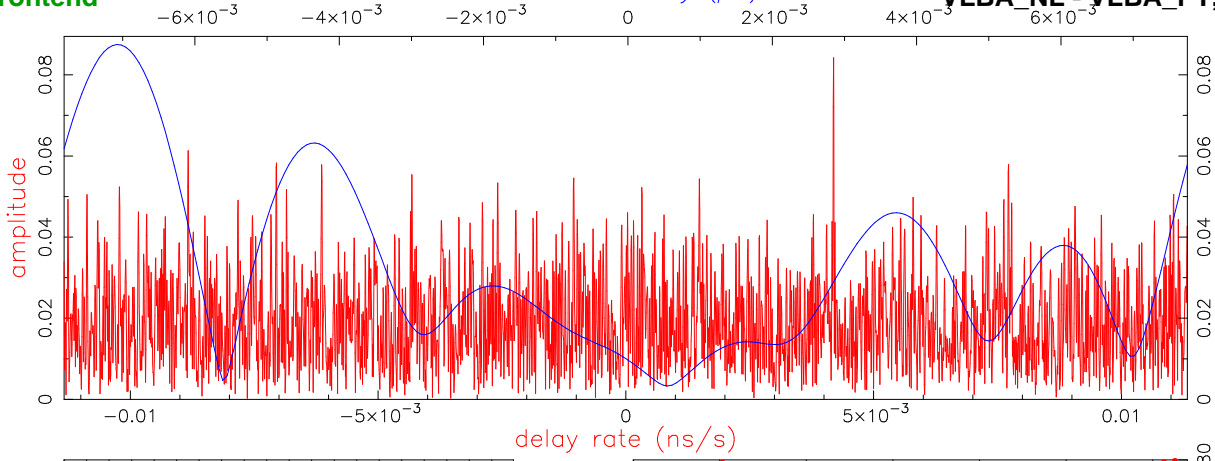
Mk4/DiFX fourfit 3.20 rev 0

frontend

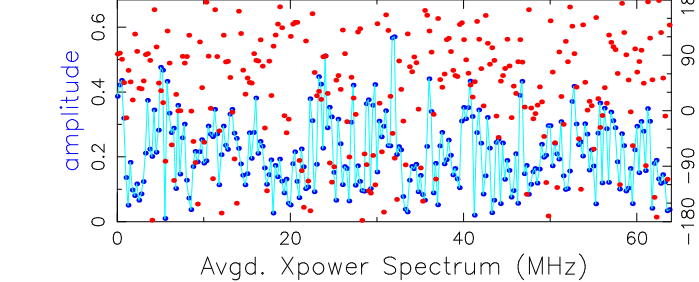
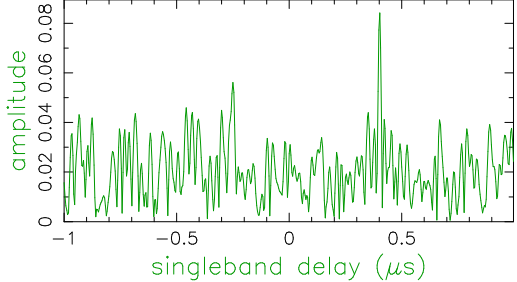
3C454\_3.128IEW, No0117, np

VLBA\_NL - VLBA\_PT, fgroup W, pol RL

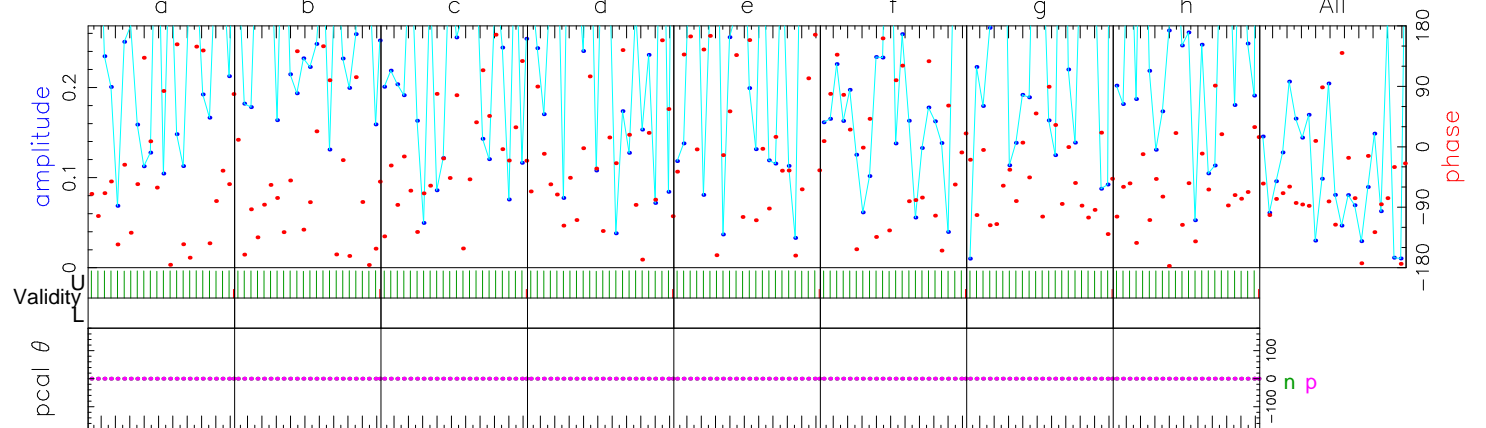
multiband delay ( $\mu$ s)



Fringe quality 0  
 SNR 5.6  
 Int time 585.247  
 Amp 0.089  
 Phase -74.2  
 PFD 1.0e+00  
 Delays (us)  
 SBD 0.401676  
 MBD 0.008301  
 Fringe rate (Hz) 0.361568  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091505.63  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145307  
 2019:280:115849  
 RA & Dec (J2000)  
 22h53m57.747940s  
 +16°08'53.560909"



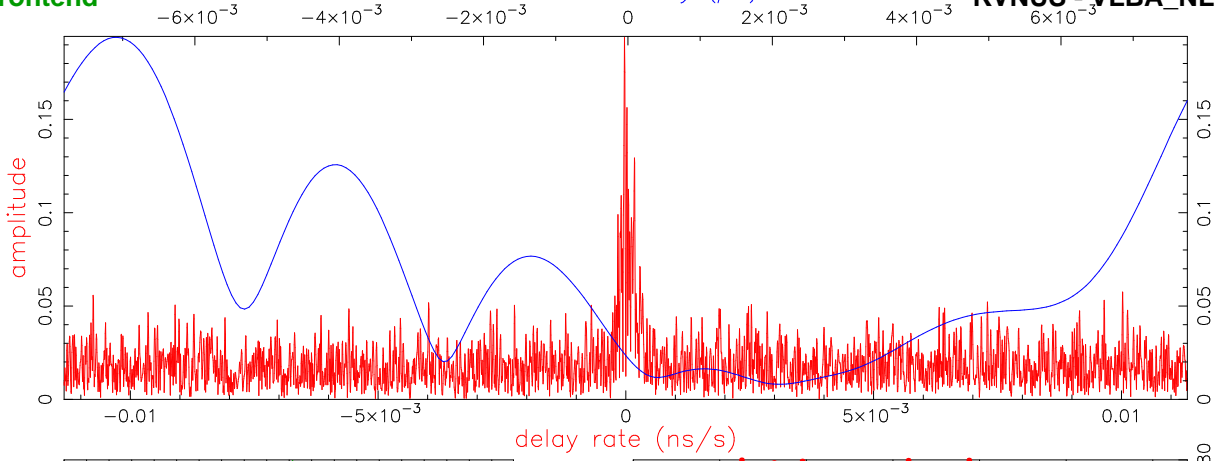
Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



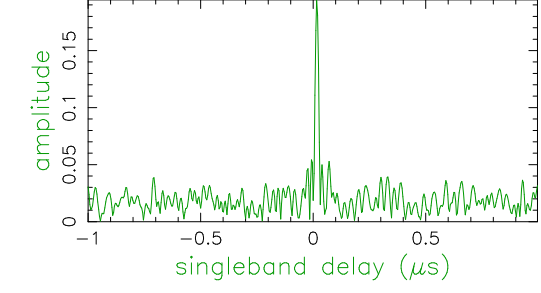
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-100.0	-113.3	-30.9	-63.2	-120.9	-113.4	-68.0	-50.9	Phase	-74.2
	0.1	0.1	0.1	0.1	0.0	0.0	0.2	0.2	Ampl.	0.1
	17.8	419.5	449.0	452.3	138.5	15.4	360.4	359.7	Sbd box	359.8
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	APs used	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
p	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
n:p	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	
p	1000	1000	1000	1000	1000	1000	1000	1000		
n	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)	-4.27950624515E+03		Apriori delay (usec)		-4.27990517093E+03		Resid mbdelay (usec)		8.30078E-03	+/- 1.9E-04
Sband delay (usec)	-4.27950349468E+03		Apriori clock (usec)		1.4551687E+01		Resid sbdelay (usec)		4.01676E-01	+/- 1.5E-03
Phase delay (usec)	-4.27990517332E+03		Apriori clockrate (us/s)		-6.9663080E-08		Resid phdelay (usec)		-2.39191E-06	+/- 6.6E-07
Delay rate (us/s)	3.15832739692E-03		Apriori rate (us/s)		3.15412994516E-03		Resid rate (us/s)		4.19745E-06	+/- 1.9E-09
Total phase (deg)			Apriori accel (us/s/s)		2.60690898482E-05		Resid phase (deg)		-74.2	+/- 20.5

ph/seg (deg) 63.8 49.1 Search (4096X32) 0.089 +/- 0.016 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 93.9 85.8 Interp. 0.087 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 37.6 29.0 Inc. seg. avg. 0.086 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 64.3 50.6 Inc. frq. avg. 0.089 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 274.6 el 19.6 pa 50.6 p: az 268.1 el 32.5 pa 59.3 u,v (fr/asec) 37.814 1468.221 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/np..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/np.W.226.128IEW

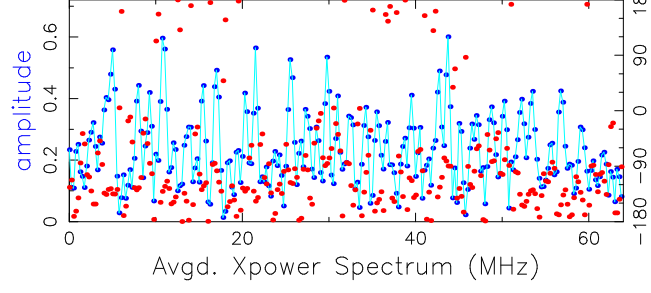
multiband delay ( $\mu\text{s}$ )



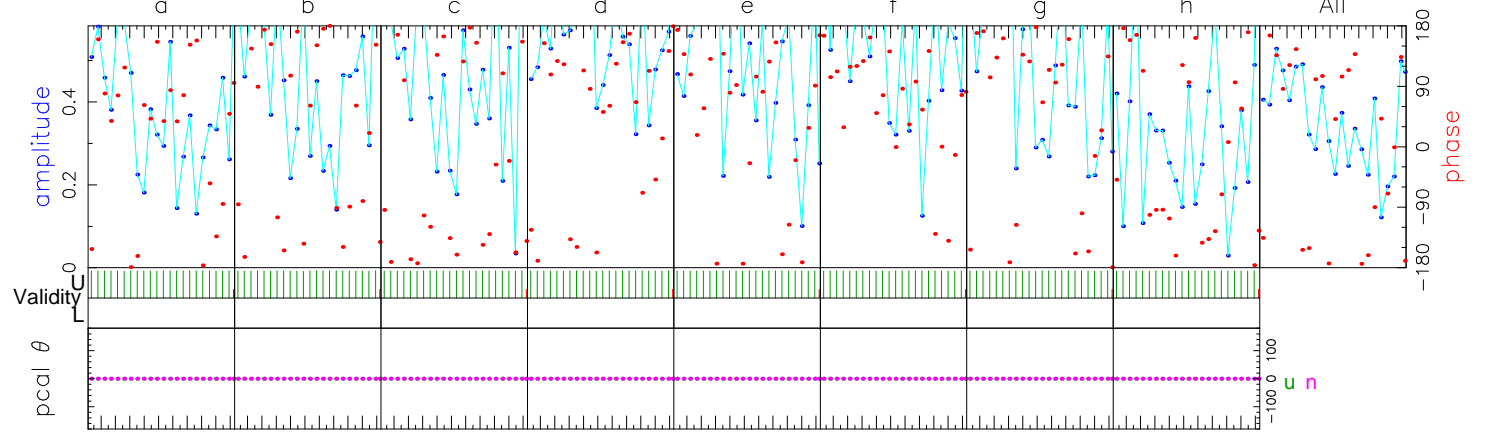
Fringe quality 9  
 SNR 12.9  
 Int time 585.846  
 Amp 0.194  
 Phase 148.7  
 PFD 6.9e-29  
 Delays (us)  
 SBD 0.016298  
 MBD -0.007046  
 Fringe rate (Hz)  
 -0.002402  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091505.63  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145248  
 2019:280:115849  
 RA & Dec (J2000)  
 22h53m57.747940s  
 +16°08'53.560909"



delay rate (ns/s)



Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec

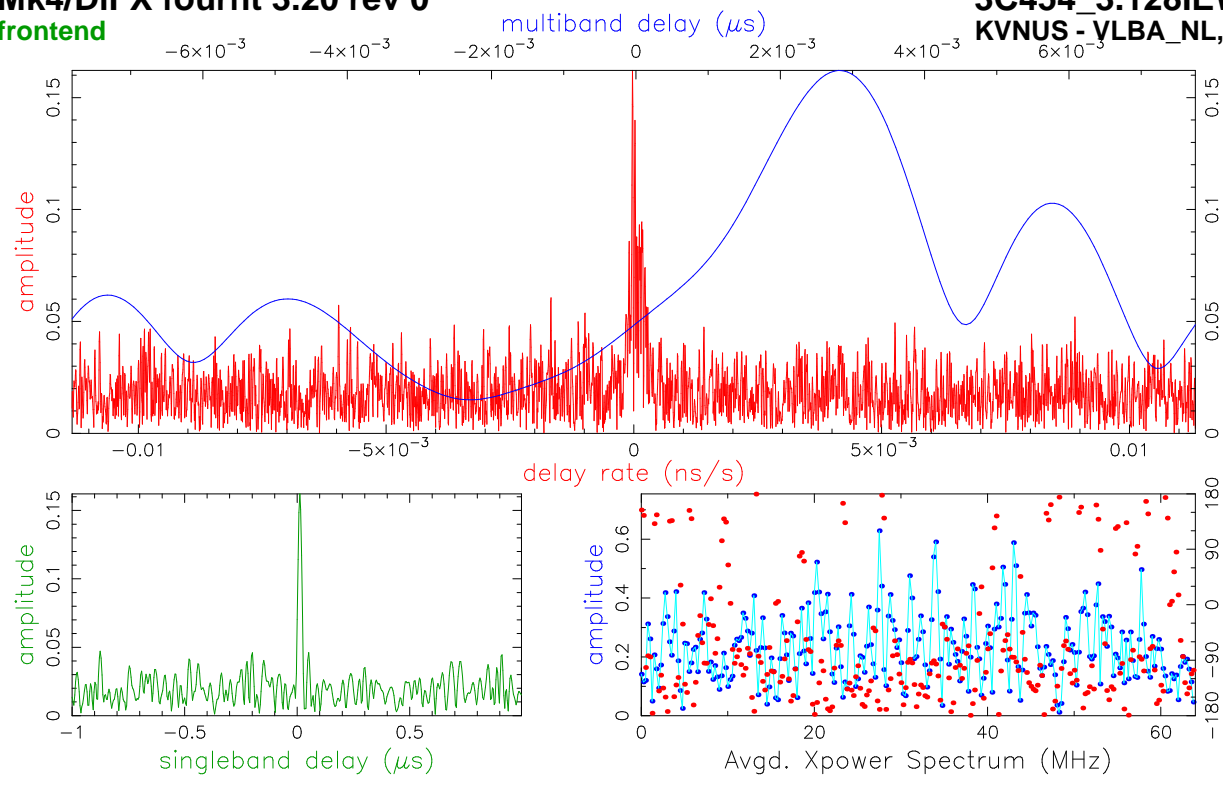


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	116.1	-176.4	-166.0	139.4	117.4	101.9	152.9	-152.0	Phase	148.7
	0.1	0.2	0.2	0.3	0.2	0.3	0.3	0.2	Ampl.	0.2
	263.0	261.6	260.6	261.1	260.9	261.1	261.7	263.4	Sbd box	261.2
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	APs used	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
n	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	5.06721055457E+03		Apriori delay (usec)		5.06720197574E+03		Resid mbdelay (usec)		-7.04617E-03	+/- 8.4E-05
Sband delay (usec)	5.06721827374E+03		Apriori clock (usec)		-1.8003082E+01		Resid sbdelay (usec)		1.62980E-02	+/- 6.7E-04
Phase delay (usec)	5.06720198053E+03		Apriori clockrate (us/s)		2.6577647E-07		Resid phdelay (usec)		4.79556E-06	+/- 2.9E-07
Delay rate (us/s)	2.14156766601E+00		Apriori rate (us/s)		2.14156769390E+00		Resid rate (us/s)		-2.78899E-08	+/- 8.4E-10
Total phase (deg)	217.2		Apriori accel (us/s/s)		-2.97178207748E-05		Resid phase (deg)		148.7	+/- 8.9

ph/seg (deg) 70.6 21.3 Search (4096X32) 0.190 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 98.5 37.3 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 43.0 12.6 Inc. seg. avg. 0.328 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 37.7 22.0 Inc. frq. avg. 0.231 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 u: az 92.8 el 32.6 pa -57.8 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -12835.820 -1301.323 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/un..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/un.W.183.128IEW

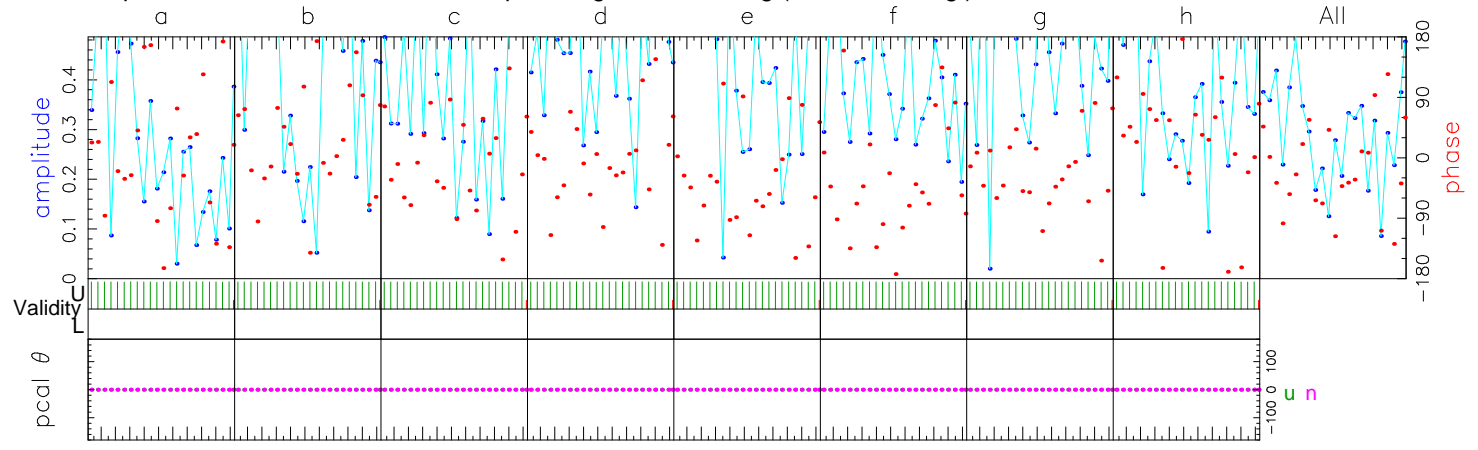
Mk4/DiFX fourfit 3.20 rev 0  
frontend

3C454\_3.128IEW, No0117, un  
KVNUS - VLBA\_NL, fgroup W, pol RR



Fringe quality 9  
SNR 10.7  
Int time 585.845  
Amp 0.162  
Phase -17.9  
PFD 6.5e-18  
Delays (us)  
SBD 0.011911  
MBD 0.002831  
Fringe rate (Hz) -0.002559  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 091505.63  
Stop 092500.06  
FRT 092000.00  
Corr/FF/build  
2020:070:232021  
2020:071:145256  
2019:280:115849  
RA & Dec (J2000)  
22h53m57.747940s  
+16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec

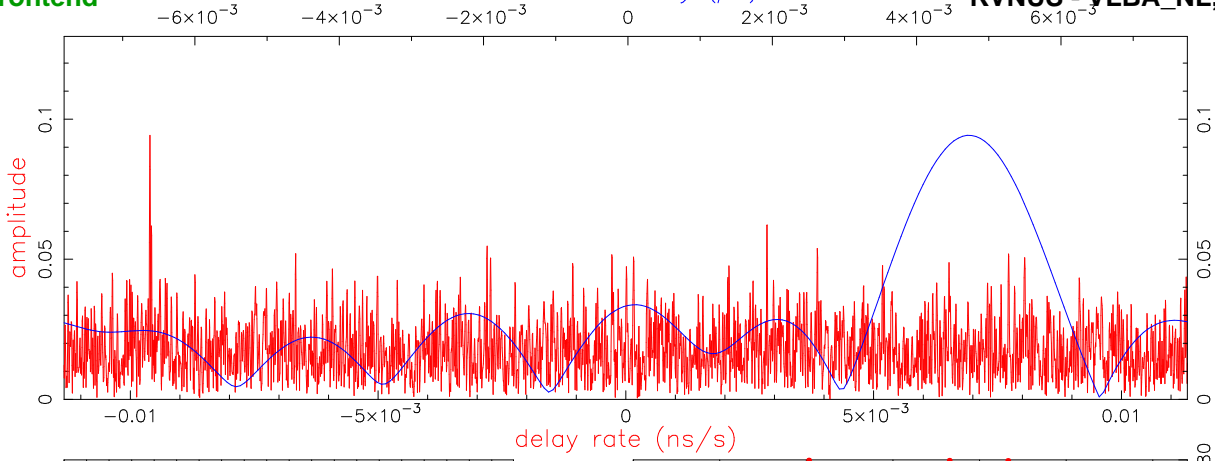


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-28.6	13.9	2.8	-13.3	-59.2	-69.2	-27.5	58.8	Phase	-17.9
	0.1	0.2	0.2	0.2	0.3	0.2	0.3	0.2	Ampl.	0.2
	472.6	260.1	259.1	259.8	259.9	261.4	260.1	261.6	Sbd box	260.0
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	APs used	
u	63000	63000	63000	63000	63000	63000	63000	63000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
n	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	5.06722043175E+03		Apriori delay (usec)		5.06720197574E+03		Resid mbdelay (usec)		2.83102E-03	+/- 1.0E-04
Sband delay (usec)	5.06721388674E+03		Apriori clock (usec)		-1.8003082E+01		Resid sbdelay (usec)		1.19110E-02	+/- 8.0E-04
Phase delay (usec)	5.06720197516E+03		Apriori clockrate (us/s)		2.6577647E-07		Resid phdelay (usec)		-5.78041E-07	+/- 3.4E-07
Delay rate (us/s)	2.14156766420E+00		Apriori rate (us/s)		2.14156769390E+00		Resid rate (us/s)		-2.97042E-08	+/- 1.0E-09
Total phase (deg)			50.5		Apriori accel (us/s/s)		-2.97178207748E-05		Resid phase (deg)	-17.9 +/- 10.7

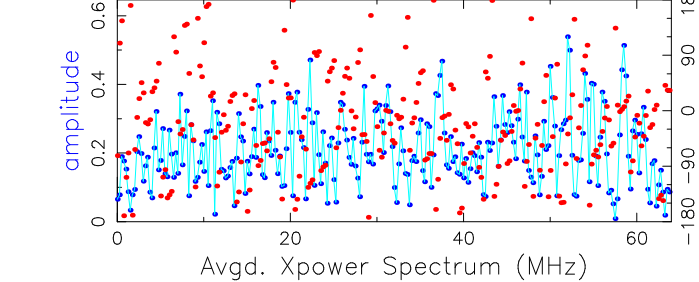
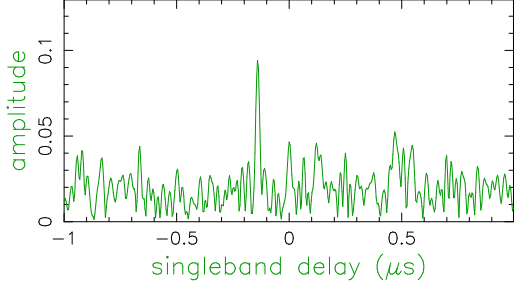
ph/seg (deg) 65.3 25.6 Search (4096X32) 0.159 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 101.2 44.7 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 44.5 15.1 Inc. seg. avg. 0.267 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 46.0 26.4 Inc. frq. avg. 0.197 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
u: az 92.8 el 32.6 pa -57.8 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -12835.820 -1301.323 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/un..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/un.W.202.128IEW

multiband delay ( $\mu$ s)

Fringe quality 0

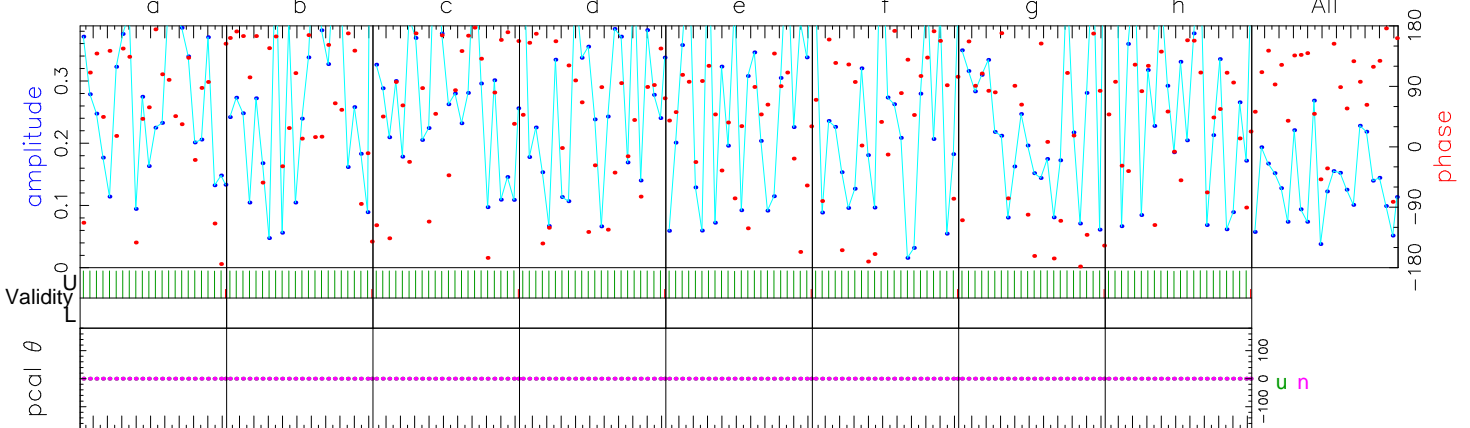


SNR 6.3  
 Int time 585.845  
 Amp 0.130  
 Phase 103.7  
 PFD 2.0e-01  
 Delays (us)  
 SBD -0.139920  
 MBD 0.004753  
 Fringe rate (Hz)  
 -0.828749  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091505.63  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145304  
 2019:280:115849  
 RA & Dec (J2000)  
 22h53m57.747940s  
 +16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



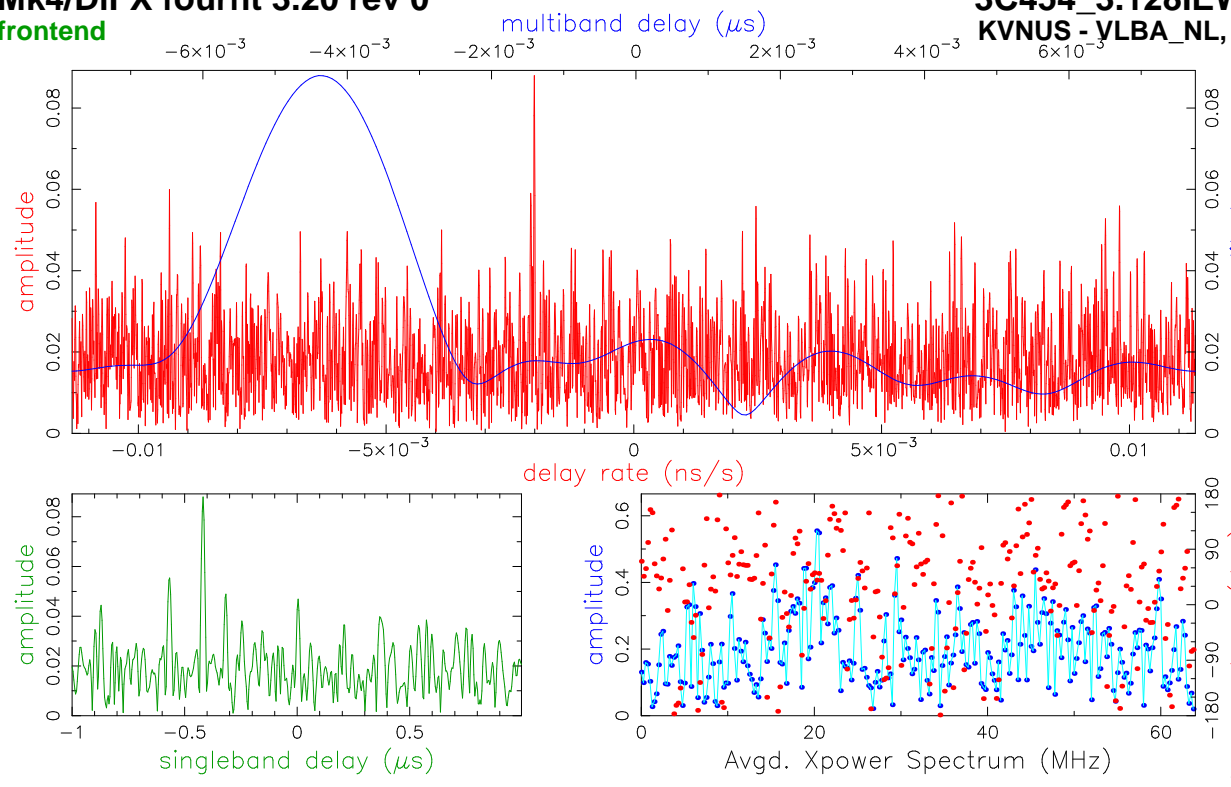
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0		
u	63000	63000	63000	63000	63000	63000	63000	63000	APs used	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
n	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

Group delay (usec)(sbd) 5.06706610347E+03 Apriori delay (usec) 5.06720197574E+03 Resid mbdelay (usec) 4.75273E-03 +/- 1.7E-04  
 Sband delay (usec) 5.06706205574E+03 Apriori clock (usec) -1.8003082E+01 Resid sbdelay (usec) -1.39920E-01 +/- 1.4E-03  
 Phase delay (usec) 5.06720197908E+03 Apriori clockrate (us/s) 2.6577647E-07 Resid phdelay (usec) 3.34475E-06 +/- 5.9E-07  
 Delay rate (us/s) 2.14155807295E+00 Apriori rate (us/s) 2.14156769390E+00 Resid rate (us/s) -9.62096E-06 +/- 1.7E-09  
 Total phase (deg) 172.2 Apriori accel (us/s/s) -2.97178207748E-05 Resid phase (deg) 103.7 +/- 18.3

ph/seg (deg) 67.4 44.0 Search (4096X32) 0.091 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 77.6 76.7 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 24.8 25.9 Inc. seg. avg. 0.145 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 19.1 45.2 Inc. frq. avg. 0.125 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 u: az 92.8 el 32.6 pa -57.8 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -12835.820 -1301.323 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/un..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/un.W.221.128IEW

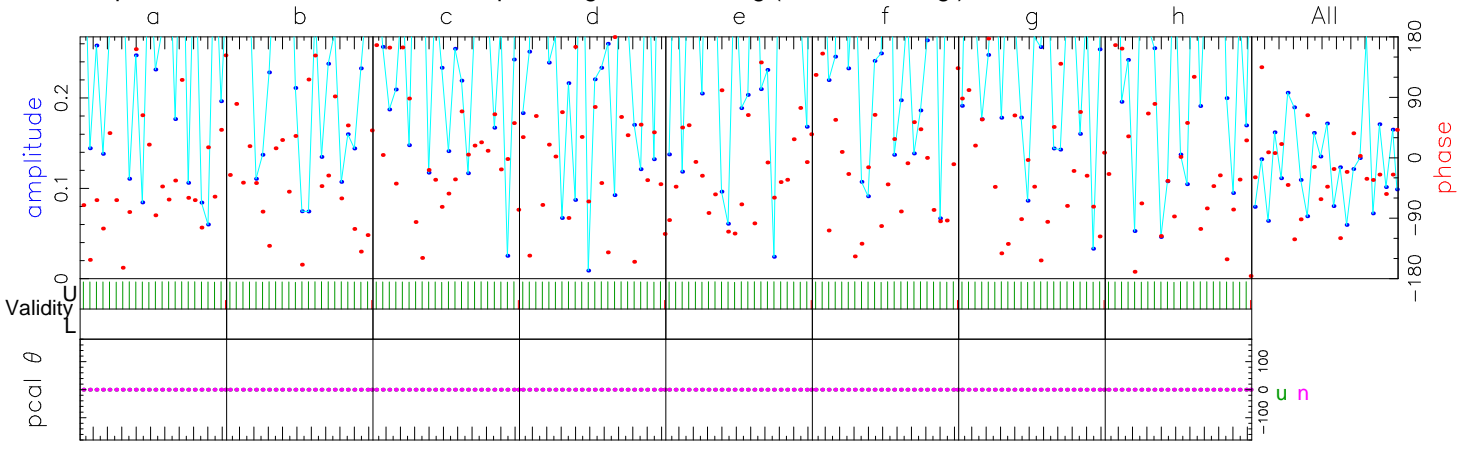
Mk4/DiFX fourfit 3.20 rev 0  
frontend

3C454\_3.128IEW, No0117, un  
KVNUS - VLBA\_NL, fgroup W, pol RL



Fringe quality 0  
SNR 5.8  
Int time 585.846  
Amp 0.089  
Phase -28.9  
PFD 9.4e-01  
Delays (us)  
SBD -0.418454  
MBD -0.004365  
Fringe rate (Hz)  
-0.173369  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 091505.63  
Stop 092500.06  
FRT 092000.00  
Corr/FF/build  
2020:070:232021  
2020:071:145312  
2019:280:115849  
RA & Dec (J2000)  
22h53m57.747940s  
+16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



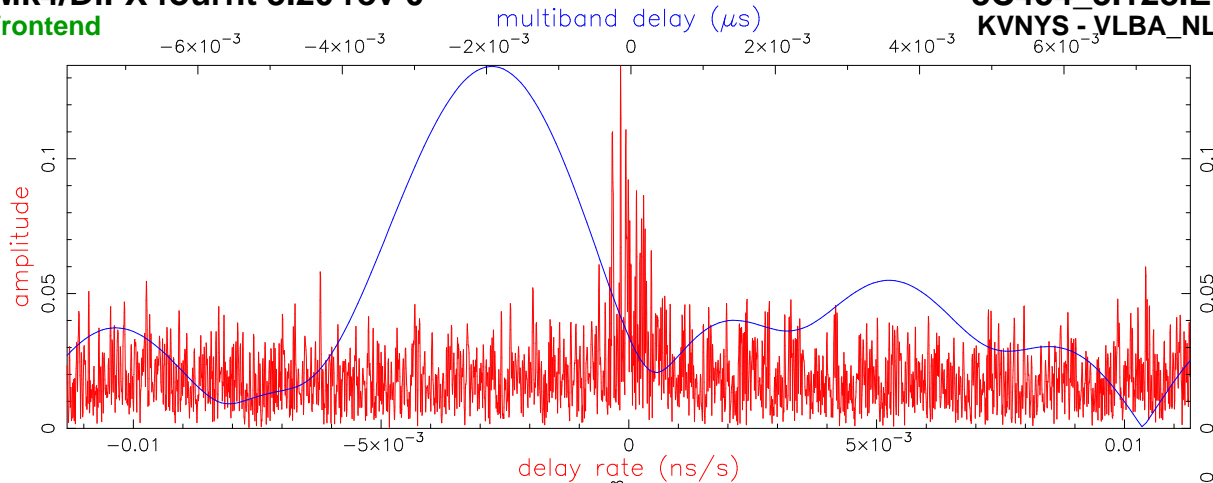
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-60.1	-12.5	-19.4	-1.2	-31.3	-31.0	-36.5	-44.9	Phase	-28.9
	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.1	Ampl.	0.1
	451.4	137.1	326.7	410.3	149.0	489.1	34.3	310.4	Sbd box	149.9
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	APs used	
u	63000	63000	63000	63000	63000	63000	63000	63000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
n	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	5.06677573552E+03		Apriori delay (usec)		5.06720197574E+03		Resid mbdelay (usec)		-4.36521E-03	+/- 1.9E-04
Sband delay (usec)	5.06678352199E+03		Apriori clock (usec)		-1.8003082E+01		Resid sbdelay (usec)		-4.18454E-01	+/- 1.5E-03
Phase delay (usec)	5.06720197481E+03		Apriori clockrate (us/s)		2.6577647E-07		Resid phdelay (usec)		-9.30565E-07	+/- 6.3E-07
Delay rate (us/s)	2.14156568126E+00		Apriori rate (us/s)		2.14156769390E+00		Resid rate (us/s)		-2.01265E-06	+/- 1.8E-09
Total phase (deg)	39.6		Apriori accel (us/s/s)		-2.97178207748E-05		Resid phase (deg)		-28.9	+/- 19.7

ph/seg (deg) 56.2 47.1 Search (4096X32) 0.085 PCal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 75.7 82.3 Interp. 0.000 PCal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 20.1 27.8 Inc. seg. avg. 0.099 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 33.6 48.5 Inc. frq. avg. 0.084 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
u: az 92.8 el 32.6 pa -57.8 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -12835.820 -1301.323 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/un..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/un.W.237.128IEW



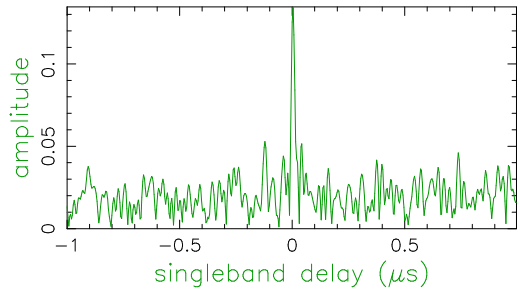
Mk4/DiFX fourfit 3.20 rev 0  
frontend

3C454\_3.128IEW, No0117, yn  
KVNS - VLBA\_NL, fgroup W, pol LL

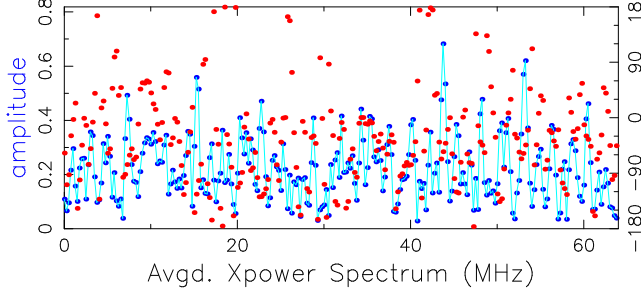


Fringe quality 9

SNR 8.9  
Int time 585.846  
Amp 0.135  
Phase 13.4  
PFD 3.9e-10  
Delays (us)  
SBD 0.003250  
MBD -0.001941  
Fringe rate (Hz)  
-0.014227  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512

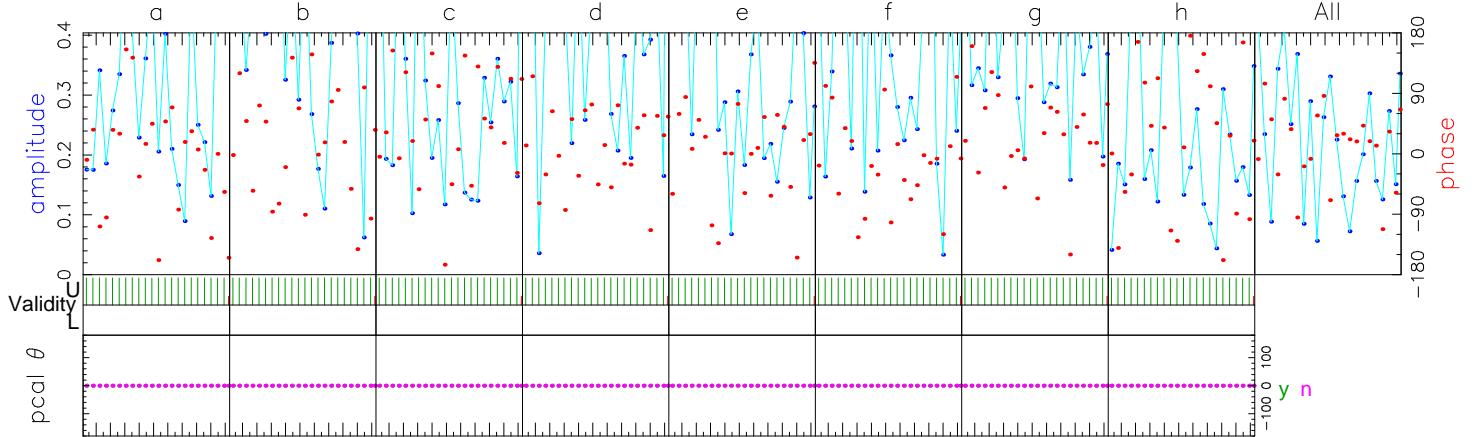


delay rate (ns/s)



Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 091505.63  
Stop 092500.06  
FRT 092000.00  
Corr/FF/build  
2020:070:232021  
2020:071:145315  
2019:280:115849  
RA & Dec (J2000)  
22h53m57.747940s  
+16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0		
y	1000	1000	1000	1000	1000	1000	1000	1000		
n	1000	1000	1000	1000	1000	1000	1000	1000		
y:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
y:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
y	1000	1000	1000	1000	1000	1000	1000	1000		
n	1000	1000	1000	1000	1000	1000	1000	1000		
y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		

Group delay (usec)(sbd)	4.46983590182E+03	Apriori delay (usec)	4.46983784307E+03	Resid mbdelay (usec)	-1.94125E-03	+/-	1.2E-04
Sband delay (usec)	4.46984109307E+03	Apriori clock (usec)	2.7000561E+08	Resid sbdelay (usec)	3.25000E-03	+/-	9.7E-04
Phase delay (usec)	4.46983784350E+03	Apriori clockrate (us/s)	-3.4223519E-08	Resid phdelay (usec)	4.31661E-07	+/-	4.1E-07
Delay rate (us/s)	2.13780988312E+00	Apriori rate (us/s)	2.13781004828E+00	Resid rate (us/s)	-1.65156E-07	+/-	1.2E-09
Total phase (deg)	302.1	Apriori accel (us/s/s)	-2.55376591868E-05	Resid phase (deg)	13.4	+/-	12.9

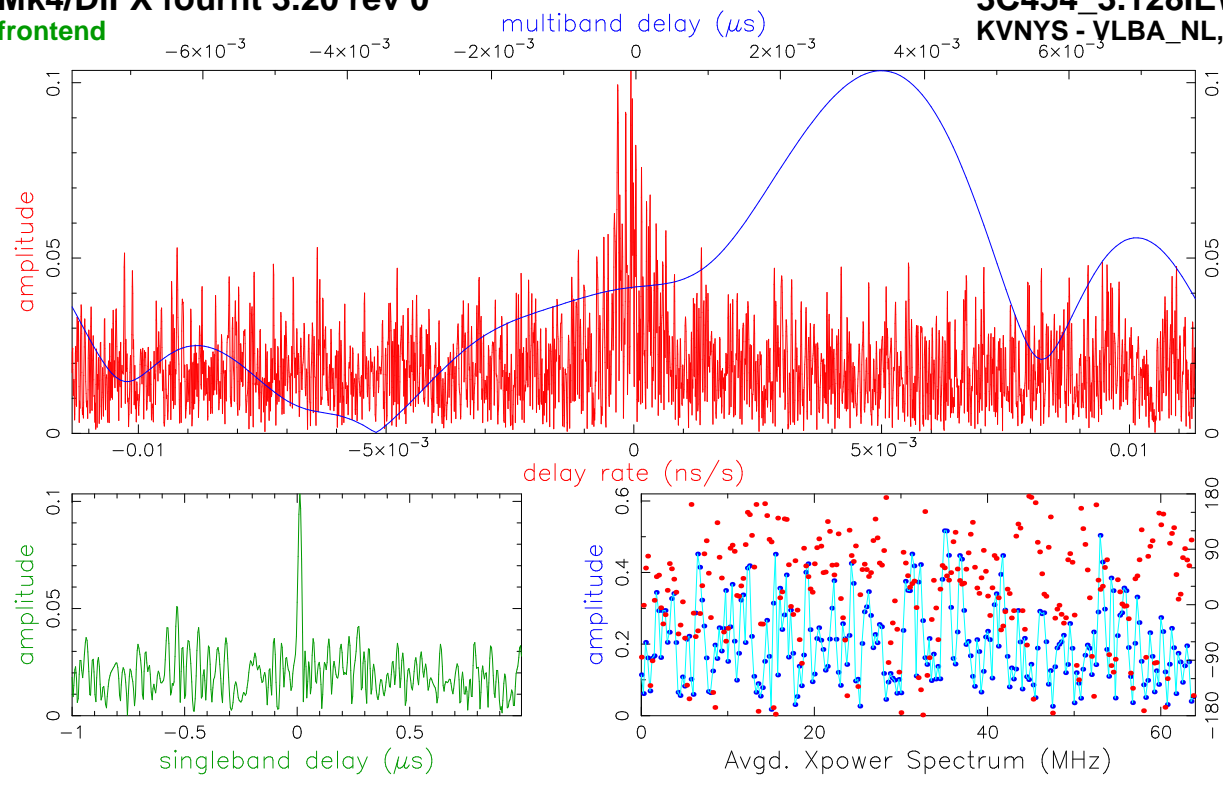
ph/seg (deg)	55.2	Theor.	30.8	Amplitude	0.135 +/- 0.015	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000
amp/seg (%)	106.4		53.8	Search (4096X32)	0.133	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		mb window (us)	-0.008	0.008
ph/frq (deg)	75.2		18.2	Interp.	0.000	Bits/sample: 2x2	SampCntNorm: enabled	dr window (ns/s)	-0.011	0.011
amp/frq (%)	52.0		31.7	Inc. seg. avg.	0.198	Sample rate(MISamp/s): 128		ion window (TEC)	0.00	0.00
				Inc. frq. avg.	0.141	Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite		

y: az 92.6 el 30.6 pa -55.5 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -12804.277 -965.078 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/yn..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/yn.W.240.128IEW

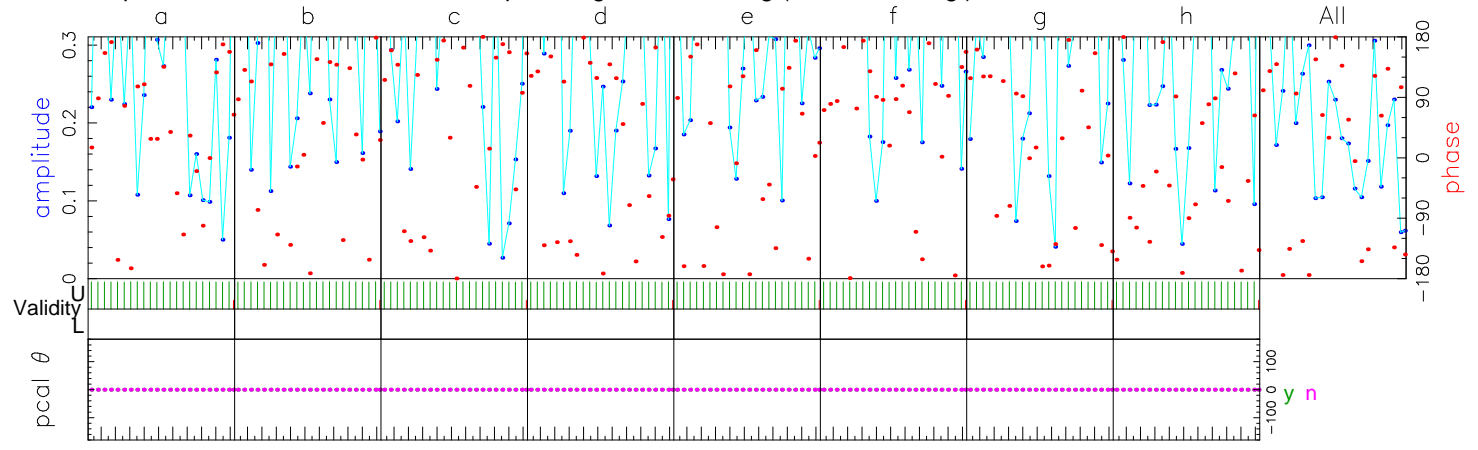
Mk4/DiFX fourfit 3.20 rev 0  
frontend

3C454\_3.128IEW, No0117, yn  
KVNYS - VLBA\_NL, fgroup W, pol RR



Fringe quality 0  
SNR 6.9  
Int time 585.845  
Amp 0.104  
Phase 150.5  
PFD 4.3e-03  
Delays (us)  
SBD 0.012146  
MBD 0.003429  
Fringe rate (Hz) -0.005108  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:279  
Start 091505.63  
Stop 092500.06  
FRT 092000.00  
Corr/FF/build  
2020:070:232021  
2020:071:145322  
2019:280:115849  
RA & Dec (J2000)  
22h53m57.747940s  
+16°08'53.560909"

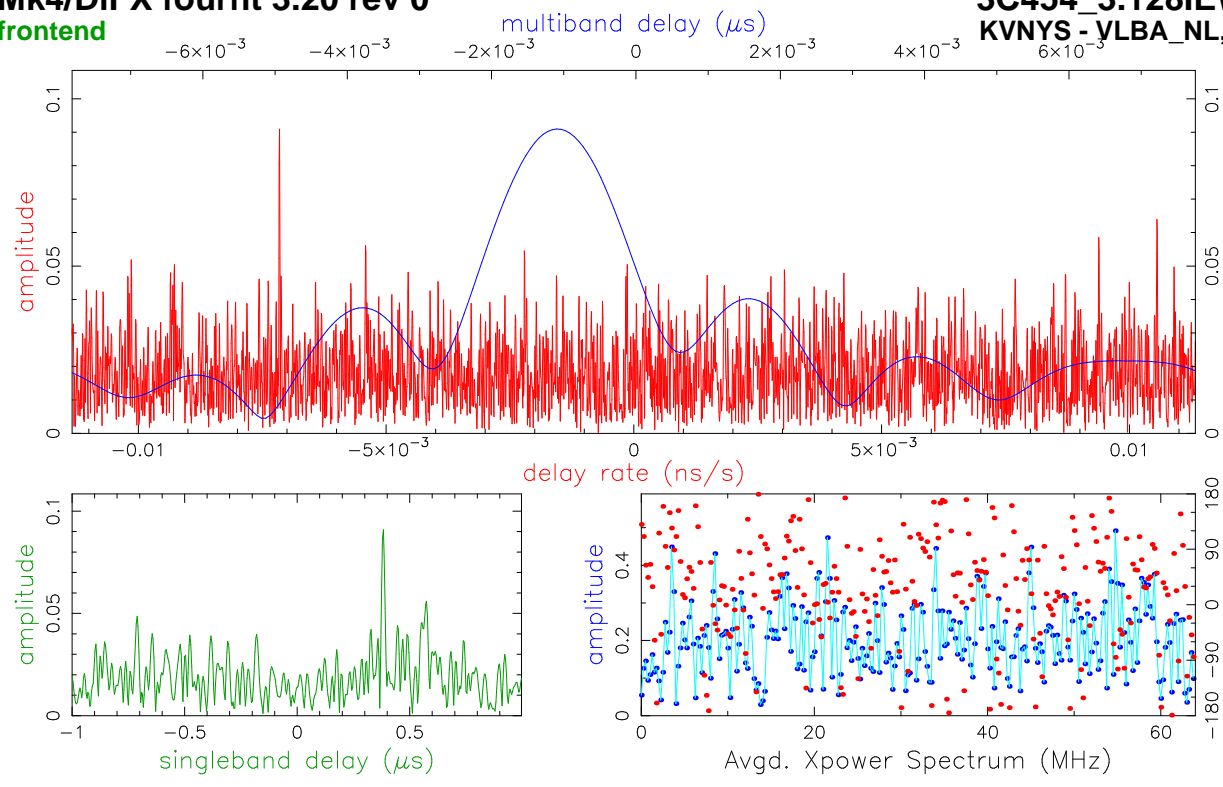
Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All		
	97.6	154.1	166.0	-174.6	166.5	115.7	117.6	-81.9	Phase	150.5		
	0.1	0.2	0.2	0.2	0.1	0.2	0.1	0.1	Ampl.	0.1		
	475.9	259.9	461.1	259.9	58.8	259.2	498.4	128.4	Sbd box	260.1		
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	APs used			
y	63000	63000	63000	63000	63000	63000	63000	63000	PC freqs			
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs			
y:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase			
y:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC			
y	1000	1000	1000	1000	1000	1000	1000	1000	PC amp			
n	1000	1000	1000	1000	1000	1000	1000	1000				
y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids			
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks			
									Tracks			
Group delay (usec)(sbd)	4.46985689710E+03		Apriori delay (usec)		4.46983784307E+03		Resid mbdelay (usec)		3.42903E-03	+/- 1.6E-04		
Sband delay (usec)	4.46984998882E+03		Apriori clock (usec)		2.7000561E+00		Resid sbdelay (usec)		1.21458E-02	+/- 1.3E-03		
Phase delay (usec)	4.46983784792E+03		Apriori clockrate (us/s)		-3.4223519E-08		Resid phdelay (usec)		4.85462E-06	+/- 5.4E-07		
Delay rate (us/s)	2.13780998898E+00		Apriori rate (us/s)		2.13781004828E+00		Resid rate (us/s)		-5.92981E-08	+/- 1.6E-09		
Total phase (deg)	79.2		Apriori accel (us/s/s)		-2.55376591868E-05		Resid phase (deg)		150.5	+/- 16.7		
	RMS	Theor.	Amplitude	0.104 +/- 0.015		Pcal mode: MANUAL, MANUAL		PC period (AP's) 5, 5				
ph/seg (deg)	68.3	40.1	Search (4096X32)	0.102		Pcal rate: 0.000E+00, 0.000E+00 (us/s)		sb window (us)	-1.000	1.000		
amp/seg (%)	133.6	70.0	Interp.	0.000		Bits/sample: 2x2		SampCntNorm: enabled	mb window (us)	-0.008	0.008	
ph/frq (deg)	62.1	23.6	Inc. seg. avg.	0.166		Sample rate(MISamp/s): 128		dr window (ns/s)	-0.011	0.011		
amp/frq (%)	59.8	41.3	Inc. frq. avg.	0.121		Data rate(Mb/s): 2048		nlags: 256	t_cohere infinite	ion window (TEC)	0.00	0.00
y: az 92.6 el 30.6 pa -55.5	n: az 274.6 el 19.6 pa 50.6		u, v (fr/asec) -12804.277 -965.078						simultaneous interpolator			
Control file: cf_1234_gmva	Input file: /Exps/c192c/v1_CygA2/1234/No0117/yn..128IEW		Output file: /Exps/c192c/v1_CygA2/1234/No0117/yn.W.247.128IEW									

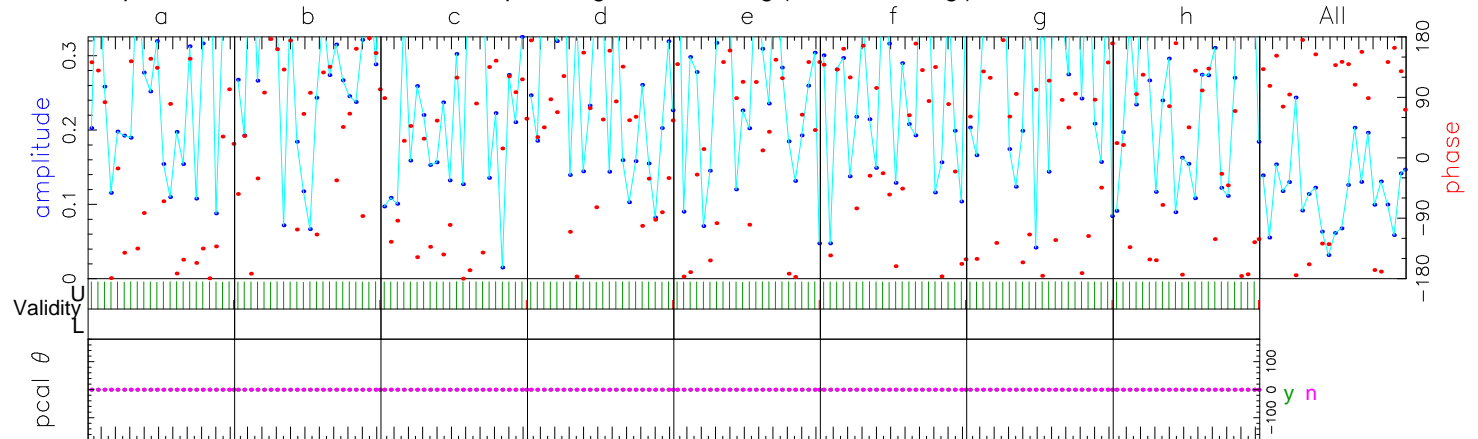
Mk4/DiFX fourfit 3.20 rev 0  
 frontend

3C454\_3.128IEW, No0117, yn  
 KVNYS - VLBA\_NL, fgroup W, pol LR



Fringe quality 0  
 SNR 6.1  
 Int time 585.845  
 Amp 0.108  
 Phase 144.2  
 PFD 5.1e-01  
 Delays (us)  
 SBD 0.381804  
 MBD -0.001133  
 Fringe rate (Hz)  
 -0.617190  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091505.63  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145329  
 2019:280:115849  
 RA & Dec (J2000)  
 22h53m57.747940s  
 +16°08'53.560909"

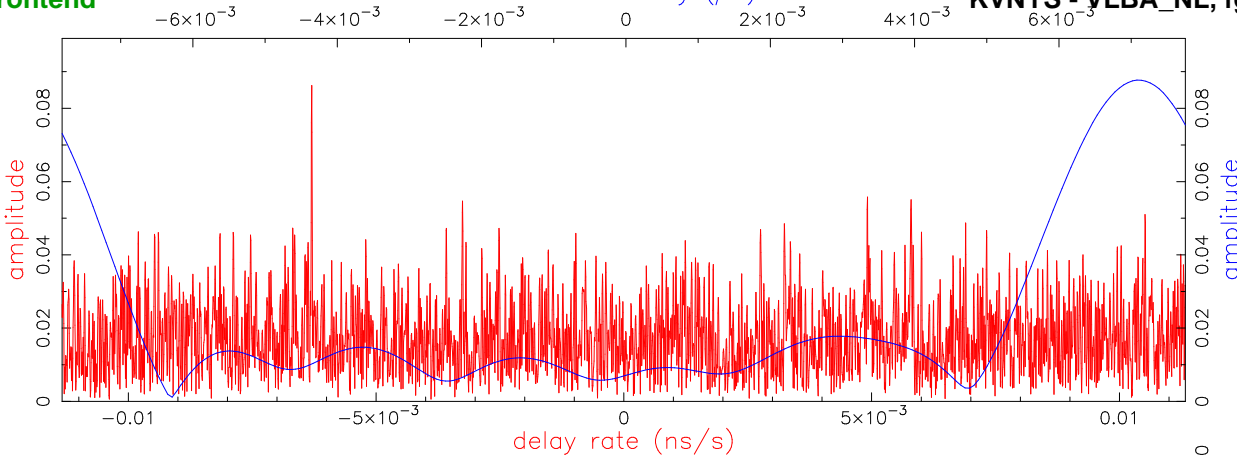
Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



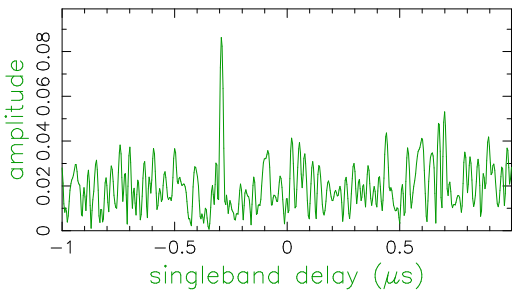
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0		
y	63000	63000	63000	63000	63000	63000	63000	63000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
y:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
y:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
y	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
n	1000	1000	1000	1000	1000	1000	1000	1000		
y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	4.47022733551E+03			Apriori delay (usec)	4.46983784307E+03			Resid mbdelay (usec)	-1.13256E-03	+/- 1.8E-04
Sband delay (usec)	4.47021964657E+03			Apriori clock (usec)	2.7000561E+00			Resid sbdelay (usec)	3.81804E-01	+/- 1.4E-03
Phase delay (usec)	4.46983784772E+03			Apriori clockrate (us/s)	-3.4223519E-08			Resid phdelay (usec)	4.64927E-06	+/- 6.1E-07
Delay rate (us/s)	2.13780288332E+00			Apriori rate (us/s)	2.13781004828E+00			Resid rate (us/s)	-7.16496E-06	+/- 1.8E-09
Total phase (deg)			72.9	Apriori accel (us/s/s)	-2.55376591868E-05			Resid phase (deg)	144.2	+/- 18.9
ph/seg (deg)	RMS 43.1	Theor. 45.4	Amplitude 0.108 +/- 0.018					PCal mode: MANUAL, MANUAL		
amp/seg (%)	62.2	79.2	Search (4096X32) 0.088					PCal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000
ph/frq (deg)	32.1	26.8	Interp. 0.000					Bits/sample: 2x2	mb window (us)	-0.008 0.008
amp/frq (%)	24.9	46.7	Inc. seg. avg. 0.106					SampCntNorm: enabled	dr window (ns/s)	-0.011 0.011
			Inc. frq. avg. 0.107					Sample rate(MISamp/s): 128	ion window (TEC)	0.00 0.00
								Data rate(Mb/s): 2048		
y: az 92.6 el 30.6 pa -55.5								nlags: 256		
n: az 274.6 el 19.6 pa 50.6								t_cohere infinite		
u,v (fr/asec) -12804.277 -965.078										simultaneous interpolator
Control file: cf_1234_gmva	Input file: /Exps/c192c/v1_CygA2/1234/No0117/yn..128IEW									Output file: /Exps/c192c/v1_CygA2/1234/No0117/yn.W.253.128IEW

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

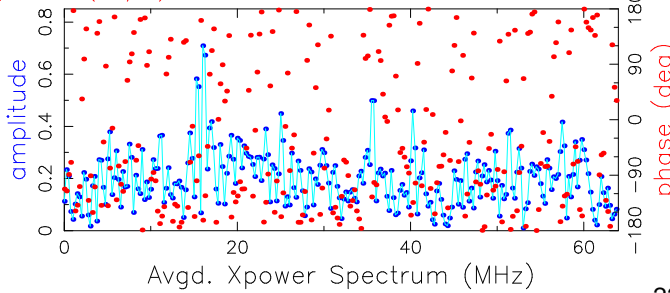
Fringe quality 0



SNR 5.8  
 Int time 585.846  
 Amp 0.099  
 Phase -168.7  
 PFD 9.9e-01  
 Delays (us)  
 SBD -0.291875  
 MBD -0.008301  
 Fringe rate (Hz)  
 -0.543318  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

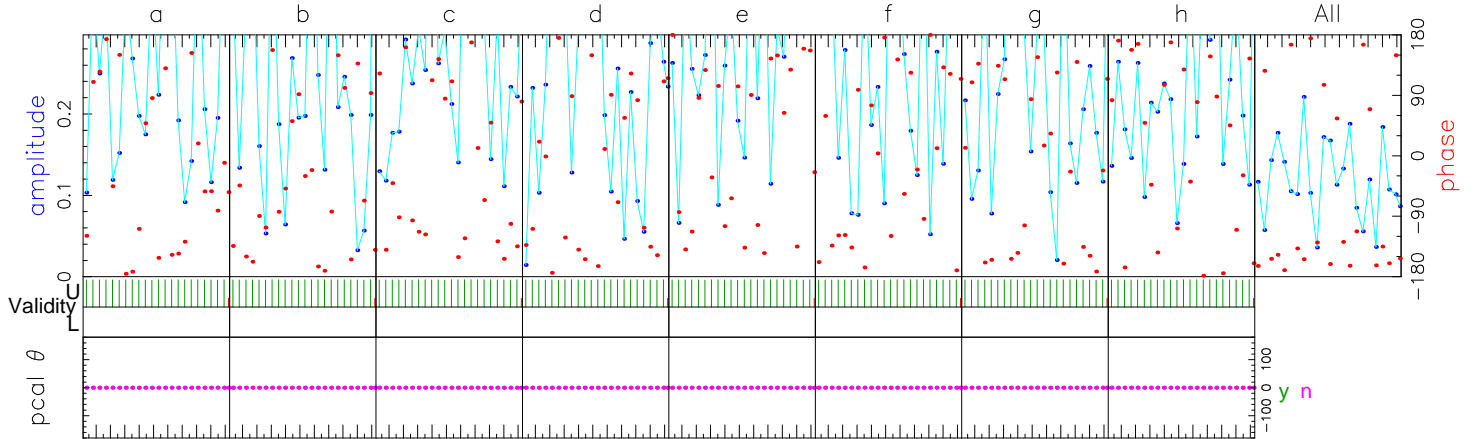


delay rate (ns/s)



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:279  
 Start 091505.63  
 Stop 092500.06  
 FRT 092000.00  
 Corr/FF/build  
 2020:070:232021  
 2020:071:145336  
 2019:280:115849  
 RA & Dec (J2000)  
 22h53m57.747940s  
 +16°08'53.560909"

Amp. and Phase vs. time for each freq., 23 segs, 52 APs / seg (26.62 sec / seg.), time ticks 30 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	174.4	-133.6	-153.5	-165.8	-179.7	-162.7	-173.6	158.2	Phase	-168.7
	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	Ampl.	0.1
	436.1	315.7	511.5	453.7	104.7	428.0	277.5	127.0	Sbd box	182.3
U/L	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	1161/0	APs used	
y	63000	63000	63000	63000	63000	63000	63000	63000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
y:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
y:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
y	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
n	1000	1000	1000	1000	1000	1000	1000	1000		
y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)		4.46954829229E+03		Apriori delay (usec)	4.46983784307E+03		Resid mbdelay (usec)	-8.30078E-03	+/-	1.9E-04
Sband delay (usec)		4.46954596807E+03		Apriori clock (usec)	2.7000561E+00		Resid sbdelay (usec)	-2.91875E-01	+/-	1.5E-03
Phase delay (usec)		4.46983783763E+03		Apriori clockrate (us/s)	-3.4223519E-08		Resid phdelay (usec)	-5.44133E-06	+/-	6.4E-07
Delay rate (us/s)		2.13780374089E+00		Apriori rate (us/s)	2.13781004828E+00		Resid rate (us/s)	-6.30738E-06	+/-	1.9E-09
Total phase (deg)		120.0		Apriori accel (us/s/s)	-2.55376591868E-05		Resid phase (deg)	-168.7	+/-	19.9

	RMS	Theor.	Amplitude	0.099 +/- 0.017	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000
ph/seg (deg)	50.9	47.7	Search (4096X32)	0.085	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		mb window (us)	-0.008	0.008
amp/seg (%)	68.2	83.3	Interp.	0.000	Bits/sample: 2x2	SampCntNorm: enabled	dr window (ns/s)	-0.011	0.011
ph/frq (deg)	22.5	28.2	Inc. seg. avg.	0.102	Sample rate(MISamp/s): 128		ion window (TEC)	0.00	0.00
amp/frq (%)	21.5	49.1	Inc. frq. avg.	0.092	Data rate(Mb/s): 2048	nlags: 256 t_cohere infinite			

y: az 92.6 el 30.6 pa -55.5 n: az 274.6 el 19.6 pa 50.6 u,v (fr/asec) -12804.277 -965.078 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0117/yn..128IEW Output file: /Exps/c192c/v1\_CygA2/1234/No0117/yn.W.258.128IEW