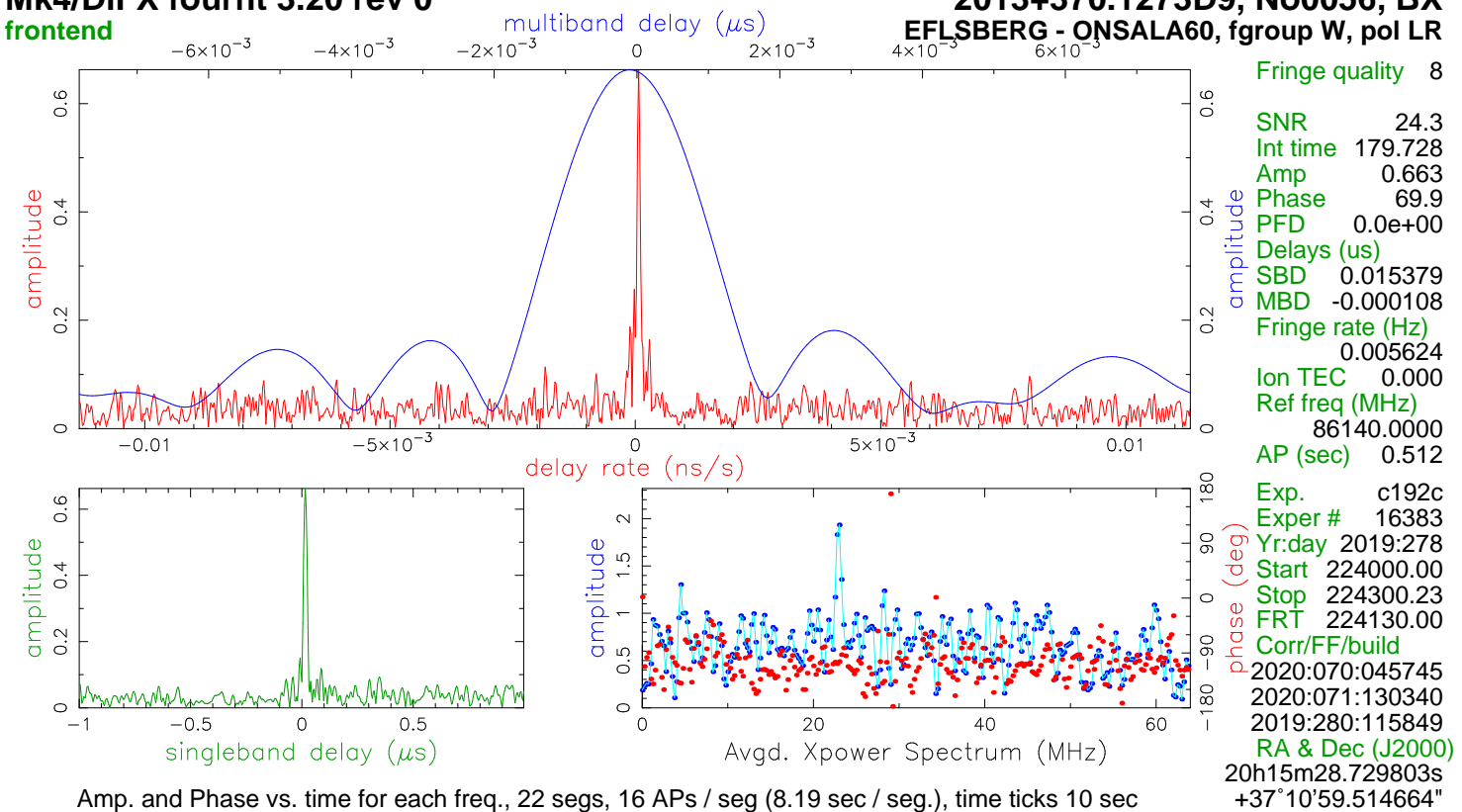
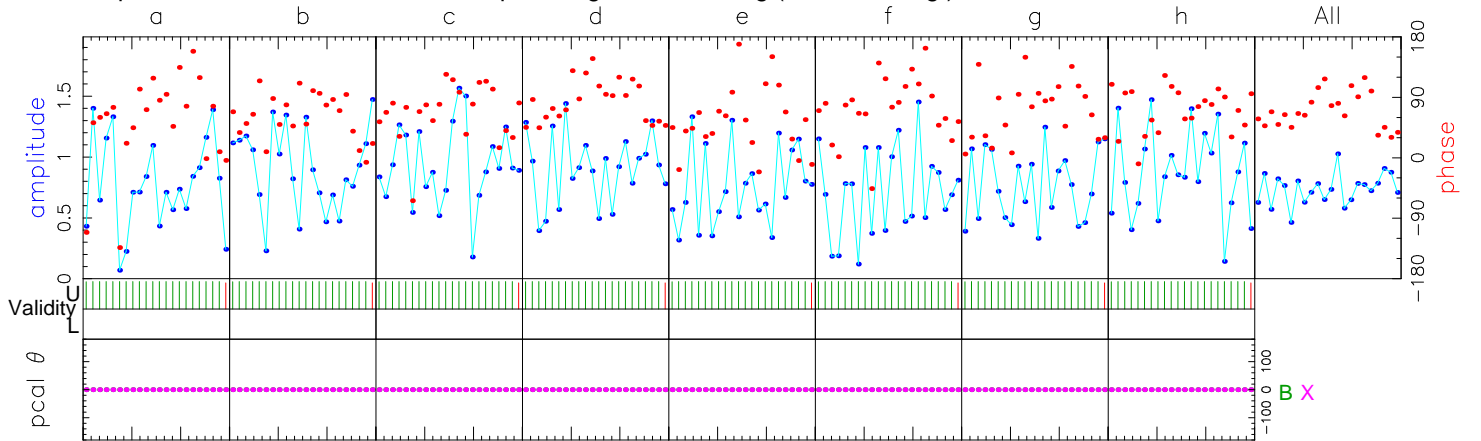


Mk4/DiFX fourfit 3.20 rev 0  
frontend

2013+370.1273D9, No0056, BX  
EFLSBERG - ONSALA60, fgroup W, pol LR



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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	73.9	59.8	70.3	84.2	50.9	82.4	65.7	69.7	Phase	69.9
	0.6	0.8	0.8	0.8	0.6	0.6	0.6	0.8	Ampl.	0.7
	261.2	261.1	260.7	260.9	260.8	261.0	261.3	261.1	Sbd box	260.9
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
B	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
B:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
B:X	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	
X	1000	1000	1000	1000	1000	1000	1000	1000		
B	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	6.55963515585E+02		Apriori delay (usec)		6.55947998123E+02		Resid mbdelay (usec)		-1.07539E-04	+/- 4.5E-05
Sband delay (usec)	6.55963377123E+02		Apriori clock (usec)		-1.5610821E+01		Resid sbdelay (usec)		1.53790E-02	+/- 3.5E-04
Phase delay (usec)	6.55948000378E+02		Apriori clockrate (us/s)		-7.2800002E-07		Resid phdelay (usec)		2.25448E-06	+/- 1.5E-07
Delay rate (us/s)	-7.16737275757E-02		Apriori rate (us/s)		-7.16737928665E-02		Resid rate (us/s)		6.52907E-08	+/- 1.5E-09
Total phase (deg)	270.9		Apriori accel (us/s/s)		-8.39574980158E-06		Resid phase (deg)		69.9	+/- 4.7

	RMS	Theor.	Amplitude	0.663 +/- 0.027	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
ph/seg (deg)	26.3	11.1	Search (1024X32)	0.658	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
amp/seg (%)	21.9	19.3	Interp.	0.000	Bits/sample: 2x2	SampCntNorm: enabled
ph/frq (deg)	12.0	6.7	Inc. seg. avg.	0.725	Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
amp/frq (%)	15.1	11.6	Inc. frq. avg.	0.668	Data rate(Mb/s): 2048	nlags: 256 t_cohere infinite
						ion window (TEC) 0.00 0.00

B: az 274.4 el 47.9 pa 52.7 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) 508.344 -1002.783 simultaneous interpolator

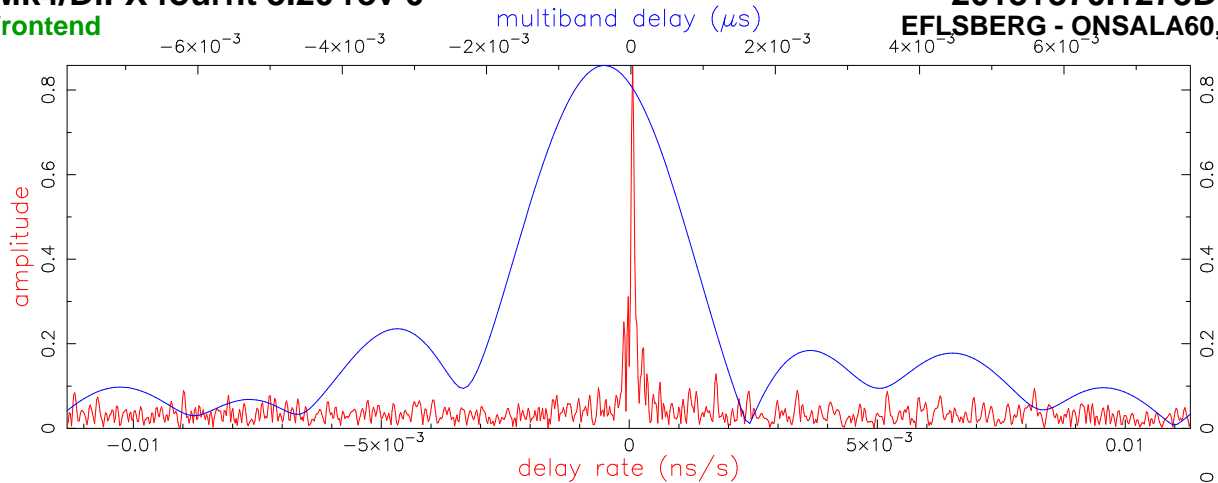
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/BX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/BX.W.115.1273D9

Mk4/DiFX fourfit 3.20 rev 0

frontend

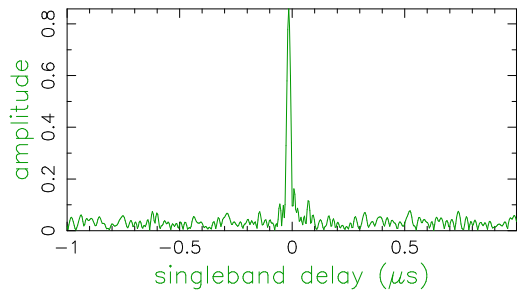
2013+370.1273D9, No0056, BX

EFLSBERG - ONSALA60, fgroup W, pol RL

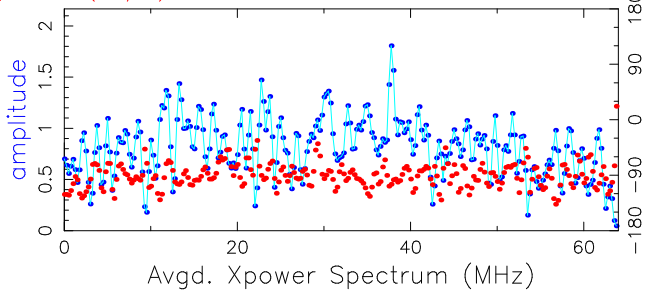


Fringe quality 8

SNR 31.5  
 Int time 179.728  
 Amp 0.858  
 Phase 94.8  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.015422  
 MBD -0.000366  
 Fringe rate (Hz)  
 0.005660  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

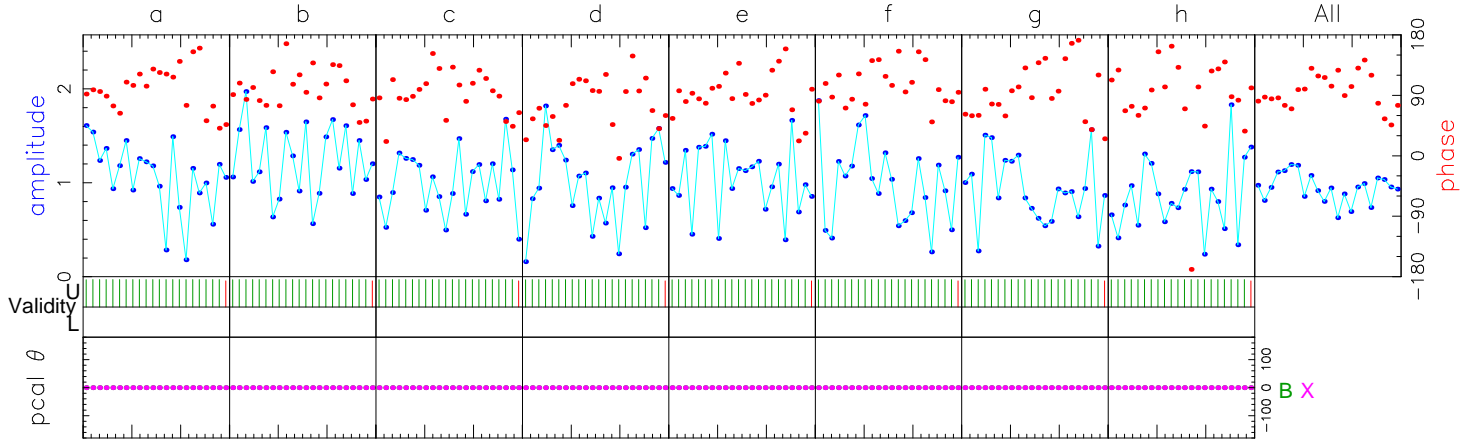


delay rate (ns/s)



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130342  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All		
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0				
B	1000	1000	1000	1000	1000	1000	1000	1000				
X	1000	1000	1000	1000	1000	1000	1000	1000				
B:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0				
B:X	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				
X	1000	1000	1000	1000	1000	1000	1000	1000				
B	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR				
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL				
Group delay (usec)(sbd)	6.55932007366E+02		Apriori delay (usec)		6.55947998123E+02		Resid mbdelay (usec)		-3.65757E-04	+/- 3.4E-05		
Sband delay (usec)	6.55932576373E+02		Apriori clock (usec)		-1.5610821E+01		Resid sbdelay (usec)		-1.54218E-02	+/- 2.7E-04		
Phase delay (usec)	6.55948001180E+02		Apriori clockrate (us/s)		-7.2800002E-07		Resid phdelay (usec)		3.05693E-06	+/- 1.2E-07		
Delay rate (us/s)	-7.16737271563E-02		Apriori rate (us/s)		-7.16737928665E-02		Resid rate (us/s)		6.57102E-08	+/- 1.1E-09		
Total phase (deg)	295.8		Apriori accel (us/s/s)		-8.39574980158E-06		Resid phase (deg)		94.8	+/- 3.6		
RMS	25.1	8.5	Amplitude		0.858 +/- 0.027		Pcal mode: MANUAL, MANUAL		PC period (AP's) 5, 5			
ph/seg (deg)	25.1	8.5	Search (1024X32)		0.853		Pcal rate: 0.000E+00, 0.000E+00 (us/s)		sb window (us)	-1.000 1.000		
amp/seg (%)	20.1	14.9	Interp.		0.000		Bits/sample: 2x2		SampCntNorm: enabled	mb window (us)	-0.008 0.008	
ph/frq (deg)	10.3	5.1	Inc. seg. avg.		0.936		Sample rate(MISamp/s): 128			dr window (ns/s)	-0.011 0.011	
amp/frq (%)	13.1	9.0	Inc. frq. avg.		0.865		Data rate(Mb/s): 2048		nlags: 256	t_cohere infinite	ion window (TEC)	0.00 0.00

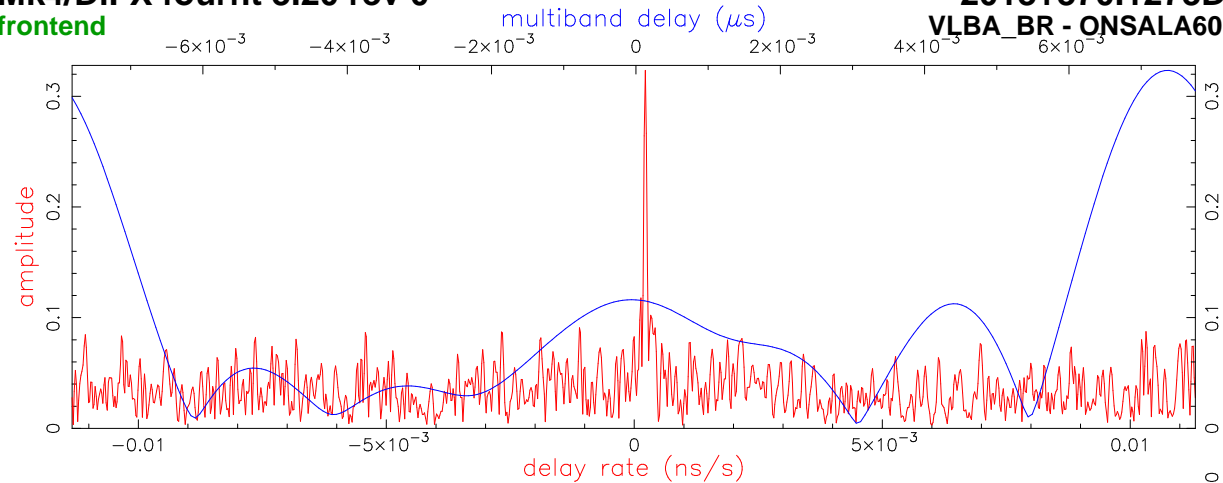
B: az 274.4 el 47.9 pa 52.7 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) 508.344 -1002.783 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/BX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/BX.W.132.1273D9

Mk4/DiFX fourfit 3.20 rev 0

frontend

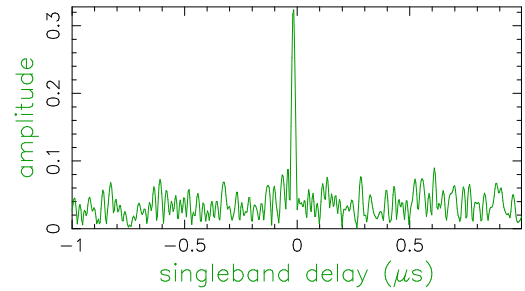
2013+370.1273D9, No0056, bX

VLBA\_BR - ONSALA60, fgroup W, pol LL

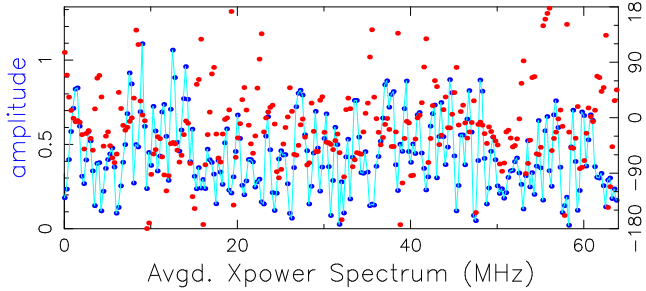


Fringe quality 9

SNR 12.0  
 Int time 178.850  
 Amp 0.328  
 Phase 55.8  
 PFD 1.0e-24  
 Delays (us)  
 SBD -0.017123  
 MBD 0.007353  
 Fringe rate (Hz)  
 0.018861  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

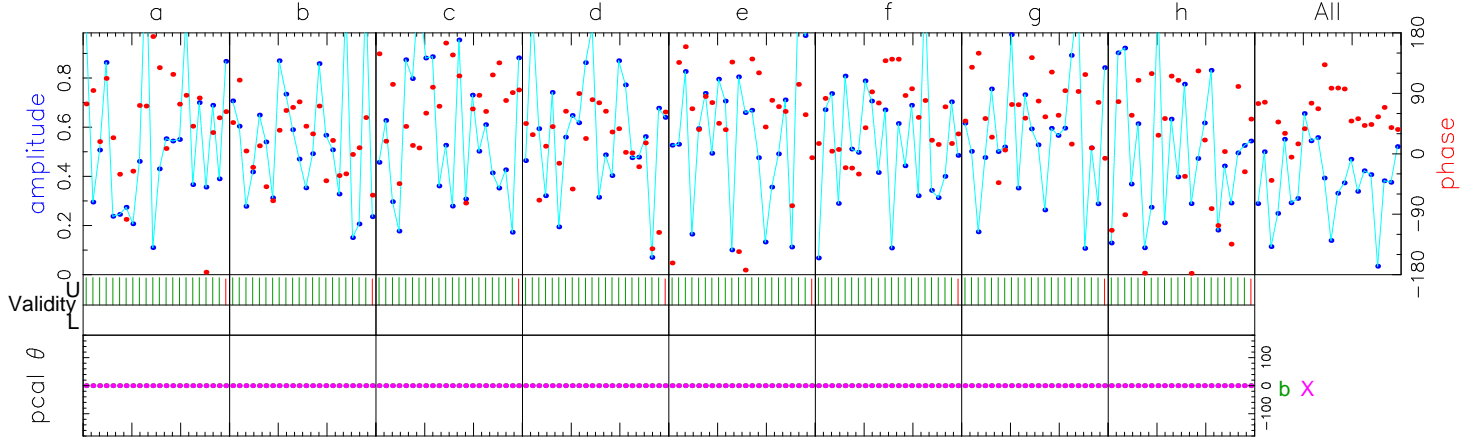


delay rate (ns/s)



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130327  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
b	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
b:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
b:X	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		
X	1000	1000	1000	1000	1000	1000	1000	1000		
b	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	-1.45680865979E+03									
Sband delay (usec)	-1.45680188579E+03									
Phase delay (usec)	-1.45678476074E+03									
Delay rate (us/s)	1.36318847573E+00									
Total phase (deg)			-104.5							
Apriori delay (usec)					-1.45678476254E+03				7.35275E-03	+/- 9.1E-05
Apriori clock (usec)					-3.3032539E+01				-1.71233E-02	+/- 7.2E-04
Apriori clockrate (us/s)					-7.7039509E-07				1.79866E-06	+/- 3.1E-07
Apriori rate (us/s)					1.36318825678E+00				2.18953E-07	+/- 3.0E-09
Apriori accel (us/s/s)					8.82191104489E-07				55.8	+/- 9.6
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								
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								

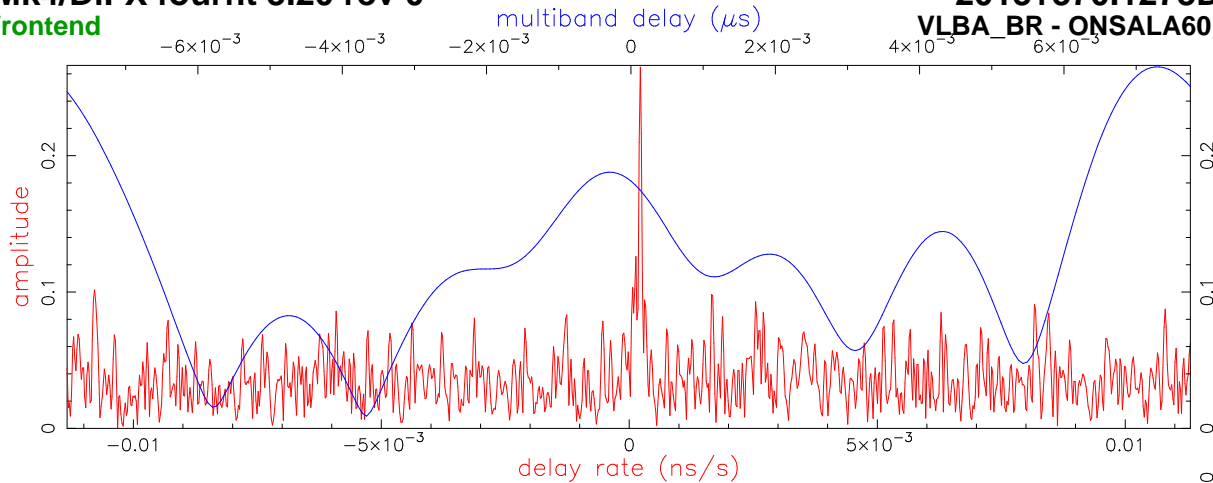
b: az 75.3 el 39.6 pa -54.2 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -9808.353 -580.219 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/bX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/bX.W.17.1273D9

Mk4/DiFX fourfit 3.20 rev 0

frontend

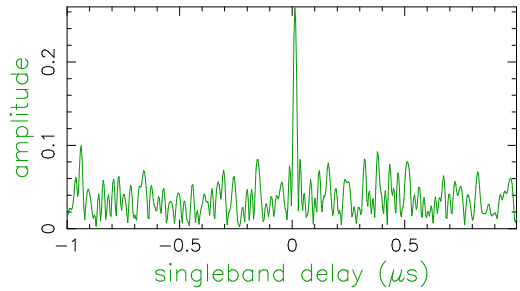
2013+370.1273D9, No0056, bX

VLBA\_BR - ONSALA60, fgroup W, pol RR

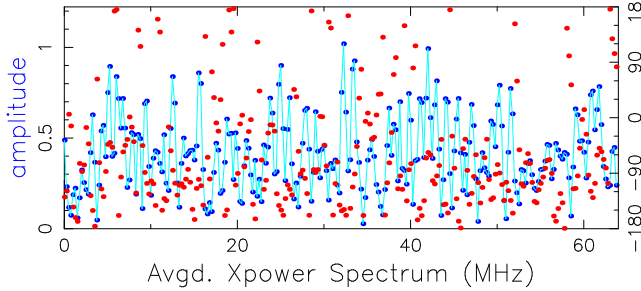


Fringe quality 9

SNR 9.7  
 Int time 178.850  
 Amp 0.266  
 Phase -44.7  
 PFD 4.6e-14  
 Delays (us)  
 SBD 0.012545  
 MBD 0.007344  
 Fringe rate (Hz) 0.019307  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512

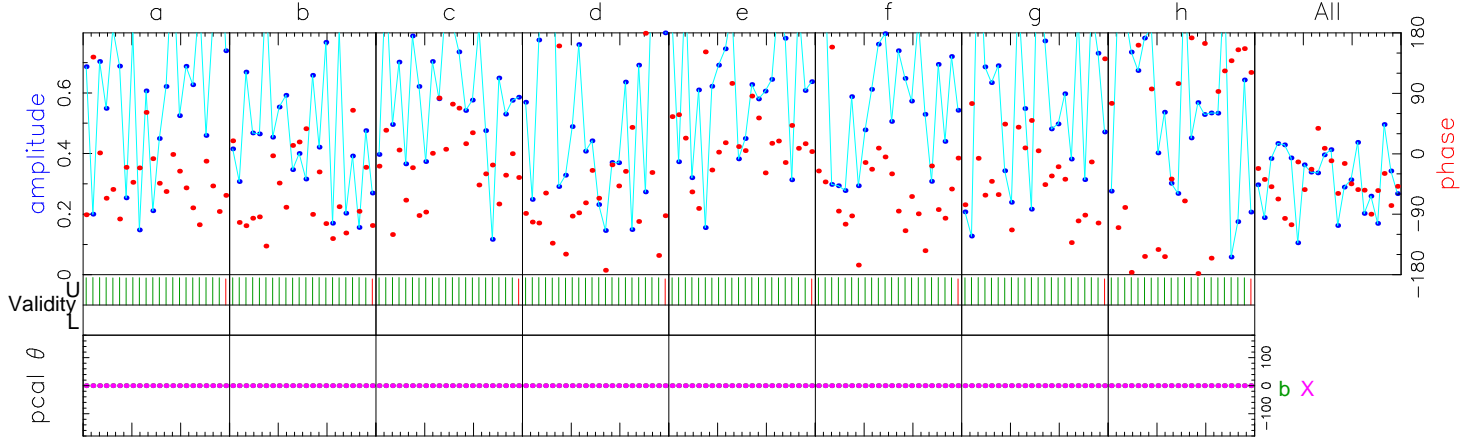


delay rate (ns/s)



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130329  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

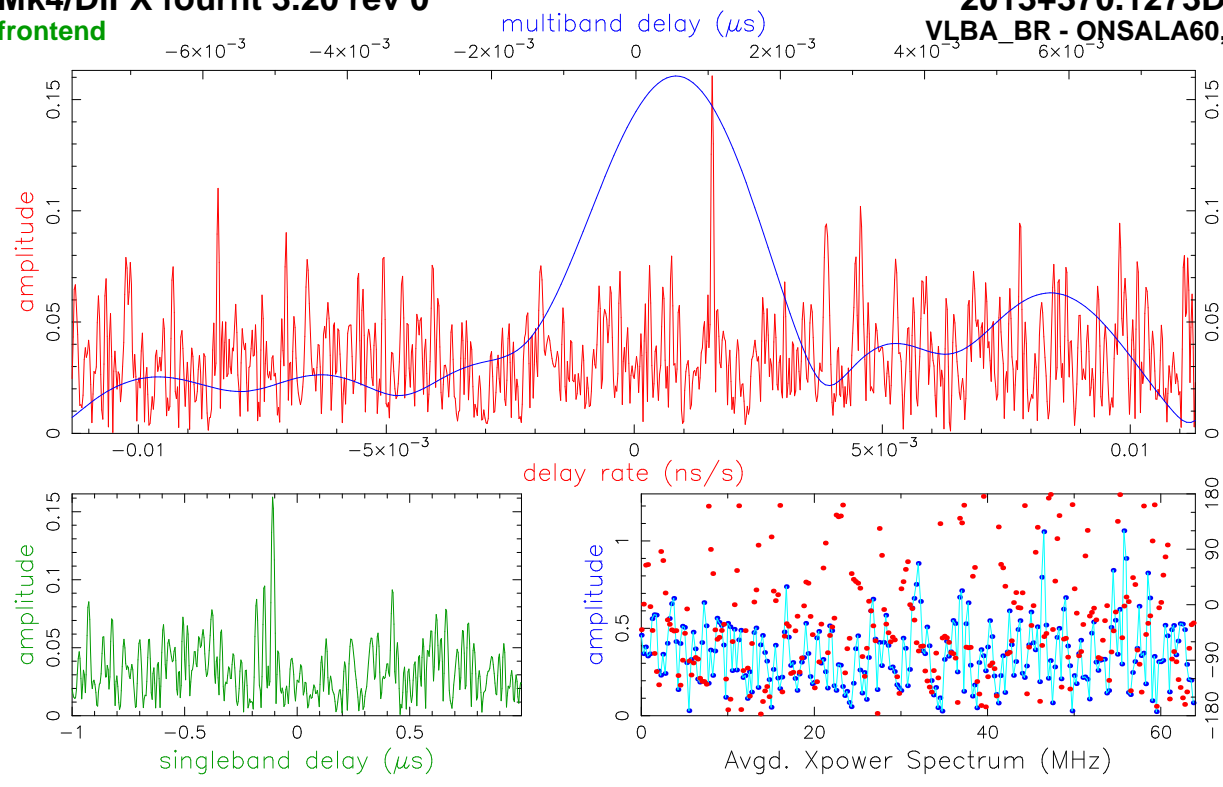
Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
b	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
b:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
b:X	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		
X	1000	1000	1000	1000	1000	1000	1000	1000		
b	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)	-1.45677741898E+03				-1.45678476254E+03				7.34356E-03	+/- 1.1E-04
Sband delay (usec)	-1.45677221729E+03				-3.3032539E+01				1.25453E-02	+/- 8.9E-04
Phase delay (usec)	-1.45678476398E+03				-7.7039509E-07				-1.44248E-06	+/- 3.8E-07
Delay rate (us/s)	1.36318848091E+00				1.36318825678E+00				2.24131E-07	+/- 3.6E-09
Total phase (deg)			-205.0		8.82191104489E-07				-44.7	+/- 11.8
	RMS	Theor.	Amplitude	0.266 +/- 0.027	Pcal mode: MANUAL, MANUAL				PC period (AP's) 5, 5	
ph/seg (deg)	33.4	27.6	Search (1024X32)	0.263	Pcal rate: 0.000E+00, 0.000E+00 (us/s)				sb window (us)	-1.000 1.000
amp/seg (%)	43.0	48.2	Interp.	0.000	Bits/sample: 2x2				mb window (us)	-0.008 0.008
ph/frq (deg)	65.3	16.7	Inc. seg. avg.	0.286	Sample rate(MISamp/s): 128				dr window (ns/s)	-0.011 0.011
amp/frq (%)	51.1	29.1	Inc. frq. avg.	0.367	Data rate(Mb/s): 2048				ion window (TEC)	0.00 0.00
b: az 75.3 el 39.6 pa -54.2			X: az 271.1 el 45.2 pa 42.5		u,v (fr/asec) -9808.353 -580.219					simultaneous interpolator

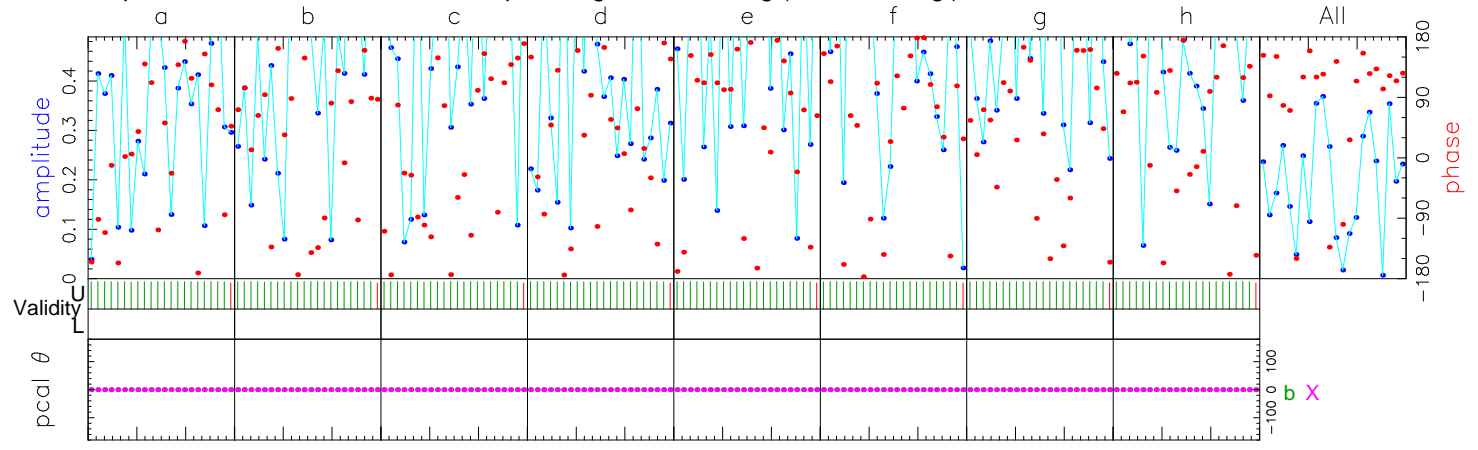
Mk4/DiFX fourfit 3.20 rev 0  
frontend

2013+370.1273D9, No0056, bX  
VLBA\_BR - ONSALA60, fgroup W, pol LR



Fringe quality 0  
SNR 5.9  
Int time 178.850  
Amp 0.163  
Phase 127.7  
PFD 3.4e-01  
Delays (us)  
SBD -0.108352  
MBD 0.000569  
Fringe rate (Hz)  
0.135577  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:278  
Start 224000.00  
Stop 224300.23  
FRT 224130.00  
Corr/FF/build  
2020:070:045745  
2020:071:130331  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All	
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0			
b	1000	1000	1000	1000	1000	1000	1000	1000			
X	1000	1000	1000	1000	1000	1000	1000	1000			
b:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0			
b:X	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			
X	1000	1000	1000	1000	1000	1000	1000	1000			
b	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL			
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR			
Group delay (usec)(sbd)	-1.45689356886E+03				-1.45678476254E+03				5.68681E-04	+/- 1.8E-04	
Sband delay (usec)	-1.45689311504E+03				-3.3032539E+01				-1.08352E-01	+/- 1.5E-03	
Phase delay (usec)	-1.45678475842E+03				-7.7039509E-07				4.11911E-06	+/- 6.2E-07	
Delay rate (us/s)	1.36318983070E+00				1.36318825678E+00				1.57392E-06	+/- 6.0E-09	
Total phase (deg)			-32.5		8.82191104489E-07				127.7	+/- 19.4	
	RMS	Theor.	Amplitude	0.163 +/- 0.028	Pcal mode: MANUAL, MANUAL				PC period (AP's) 5, 5		
ph/seg (deg)	50.5	45.4	Search (1024X32)	0.158	Pcal rate: 0.000E+00, 0.000E+00 (us/s)				sb window (us)	-1.000 1.000	
amp/seg (%)	70.4	79.3	Interp.	0.000	Bits/sample: 2x2				SampCntNorm: enabled	mb window (us)	-0.008 0.008
ph/frq (deg)	21.4	27.4	Inc. seg. avg.	0.151	Sample rate(MISamp/s): 128				dr window (ns/s)	-0.011 0.011	
amp/frq (%)	47.8	47.8	Inc. frq. avg.	0.150	Data rate(Mb/s): 2048				nlags: 256 t_cohere infinite	ion window (TEC)	0.00 0.00

b: az 75.3 el 39.6 pa -54.2 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -9808.353 -580.219 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/bX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/bX.W.53.1273D9

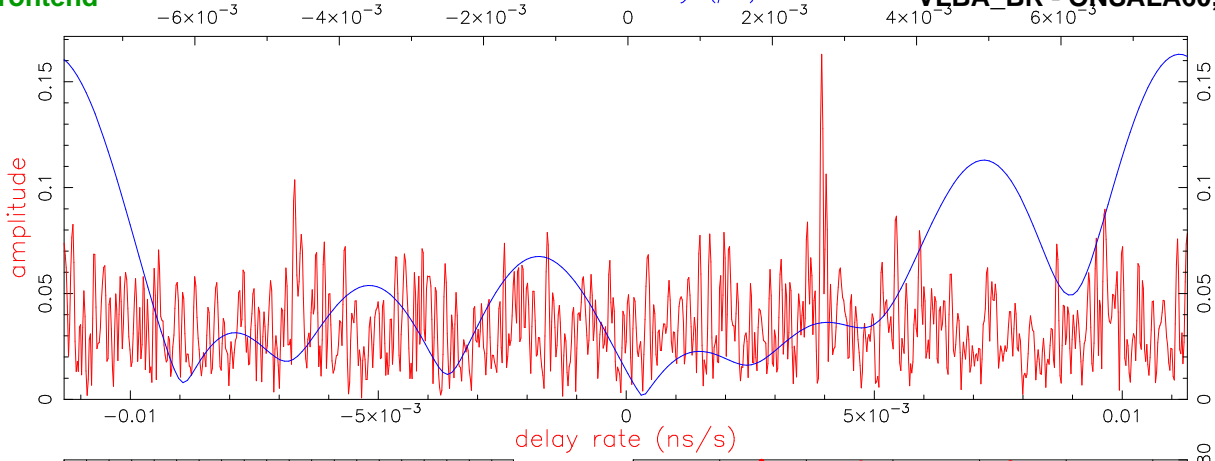
# Mk4/DiFX fourfit 3.20 rev 0

frontend

## 2013+370.1273D9, No0056, bX

VLBA\_BR - ONSALA60, fgroup W, pol RL

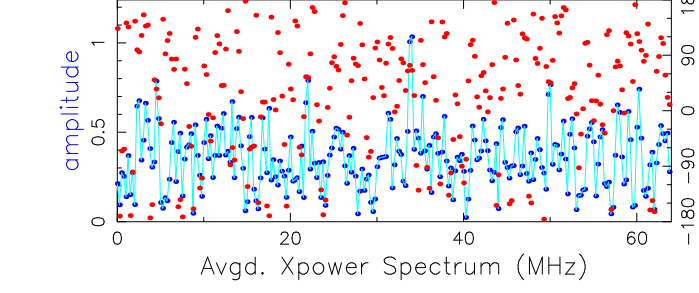
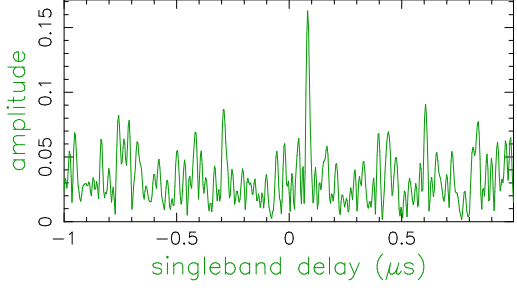
multiband delay ( $\mu\text{s}$ )



Fringe quality 0

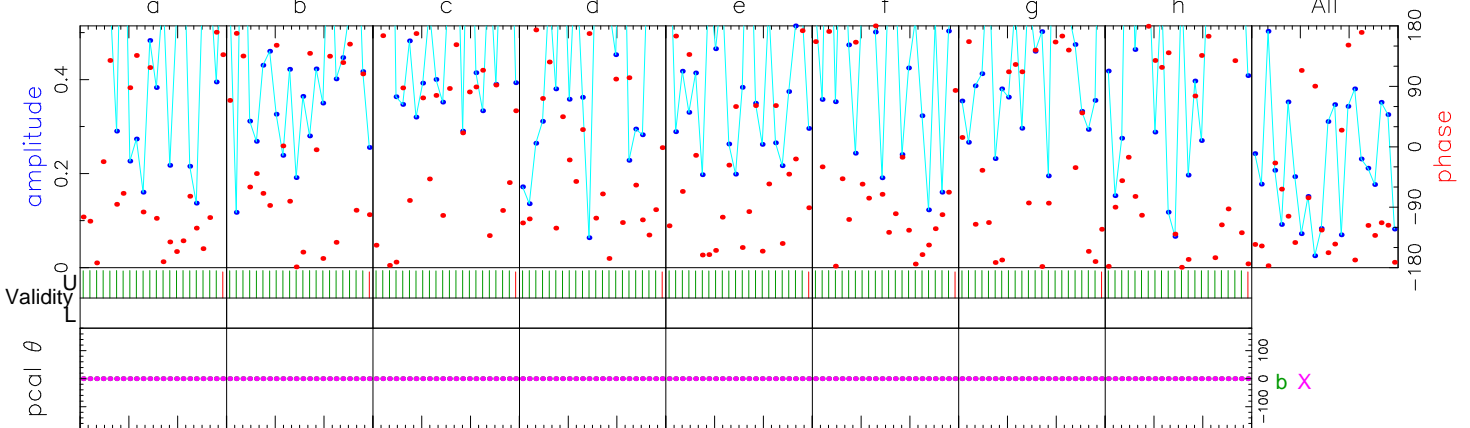
SNR 6.0  
Int time 178.850  
Amp 0.171  
Phase -143.6  
PFD 2.8e-01  
Delays (us)  
SBD 0.082247  
MBD 0.007651  
Fringe rate (Hz) 0.339959  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512

Exp. c192c  
Exper # 16383  
Yr:day 2019:278  
Start 224000.00  
Stop 224300.23  
FRT 224130.00  
Corr/FF/build 2020:070:045745  
2020:071:130334  
2019:280:115849  
RA & Dec (J2000) 20h15m28.729803s +37°10'59.514664"



Avgd. Xpower Spectrum (MHz)

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
b	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
b:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
b:X	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		
X	1000	1000	1000	1000	1000	1000	1000	1000		
b	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	-1.45669898683E+03									
Sband delay (usec)	-1.45670251579E+03									
Phase delay (usec)	-1.45678476717E+03									
Delay rate (us/s)	1.36319220337E+00									
Total phase (deg)			-303.9							
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										
sb window (us)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
PC period (AP's) 5, 5										
SampCntNorm: enabled										
nlags: 256										
t_cohere infinite										
simultaneous interpolator										

b: az 75.3 el 39.6 pa -54.2 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -9808.353 -580.219

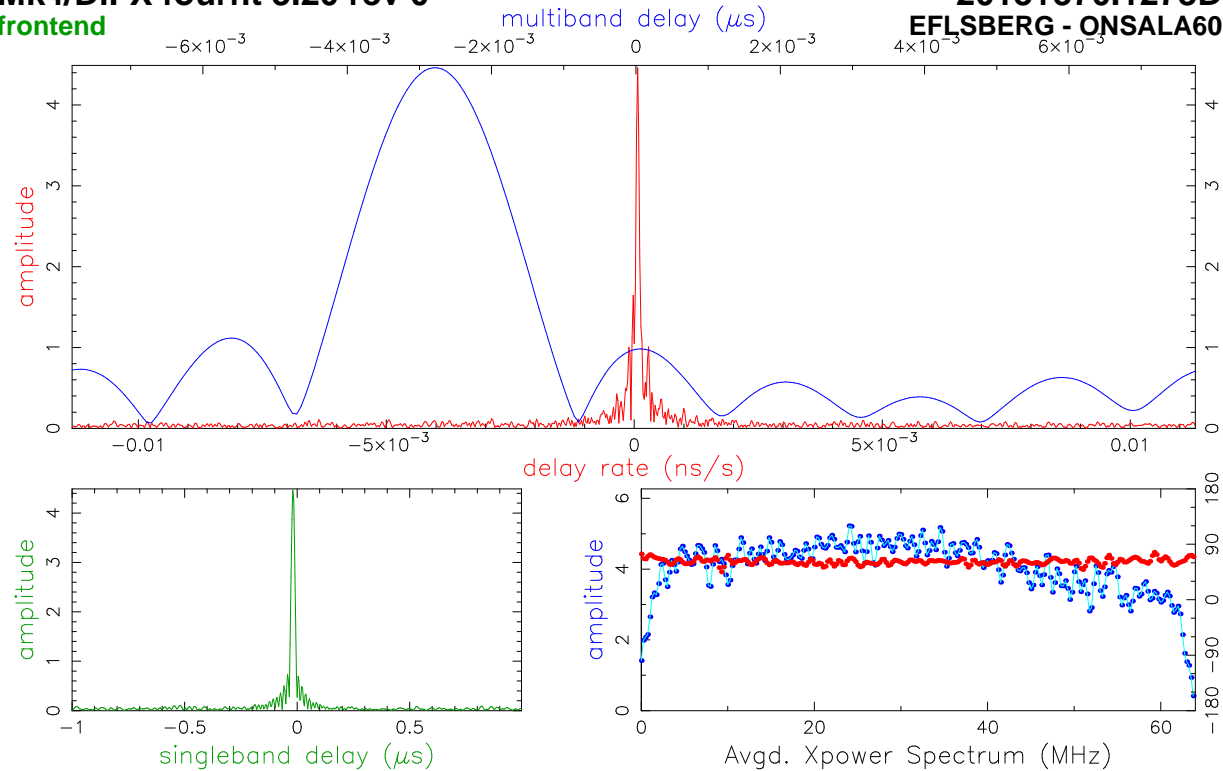
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/bX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/bX.W.75.1273D9

# Mk4/DiFX fourfit 3.20 rev 0

frontend

## 2013+370.1273D9, No0056, BX

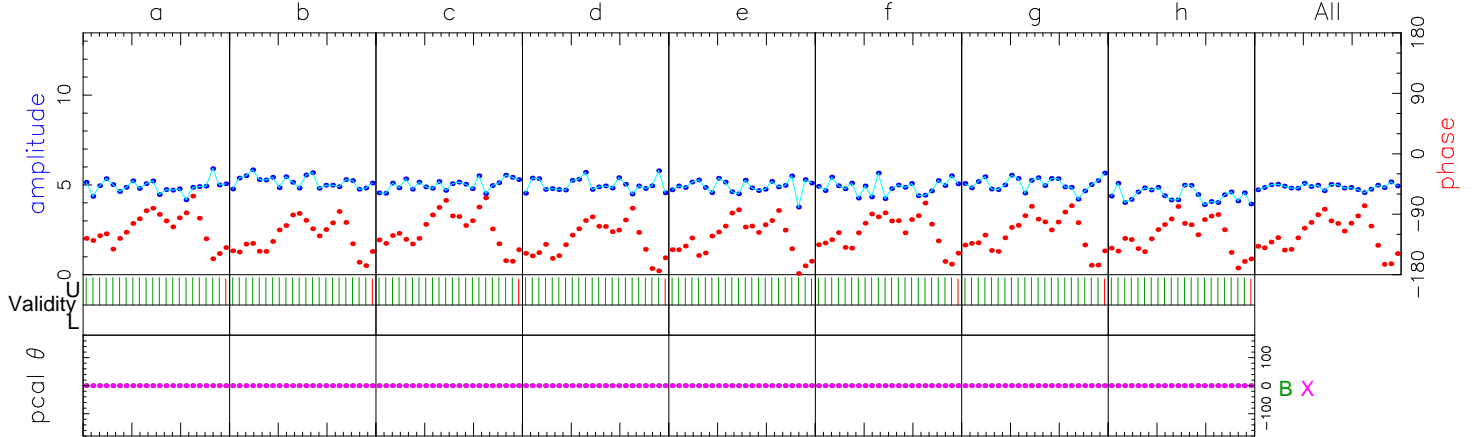
EFLSBERG - ONSALA60, fgroup W, pol LL



Fringe quality 7

SNR 164.6  
 Int time 179.728  
 Amp 4.489  
 Phase -120.2  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.018480  
 MBD -0.002754  
 Fringe rate (Hz)  
 0.005643  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130335  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-112.2	-123.6	-113.1	-128.8	-124.5	-117.5	-118.8	-123.0	Phase	-120.2
	4.5	4.8	4.5	4.5	4.5	4.5	4.6	4.0	Ampl.	4.5
	252.3	252.1	252.4	252.2	252.5	252.2	252.4	251.5	Sbd box	252.3
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
B	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
B:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
B:X	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	
X	1000	1000	1000	1000	1000	1000	1000	1000		
B	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	6.55929618835E+02		Apriori delay (usec)		6.55947998123E+02		Resid mbdelay (usec)		-2.75429E-03	+/- 6.6E-06
Sband delay (usec)	6.55929518123E+02		Apriori clock (usec)		-1.5610821E+01		Resid sbdelay (usec)		-1.84800E-02	+/- 5.2E-05
Phase delay (usec)	6.55947994248E+02		Apriori clockrate (us/s)		-7.2800002E-07		Resid phdelay (usec)		-3.87542E-06	+/- 2.2E-08
Delay rate (us/s)	-7.16737273575E-02		Apriori rate (us/s)		-7.16737928665E-02		Resid rate (us/s)		6.55090E-08	+/- 2.2E-10
Total phase (deg)	80.8		Apriori accel (us/s/s)		-8.39574980158E-06		Resid phase (deg)		-120.2	+/- 0.7

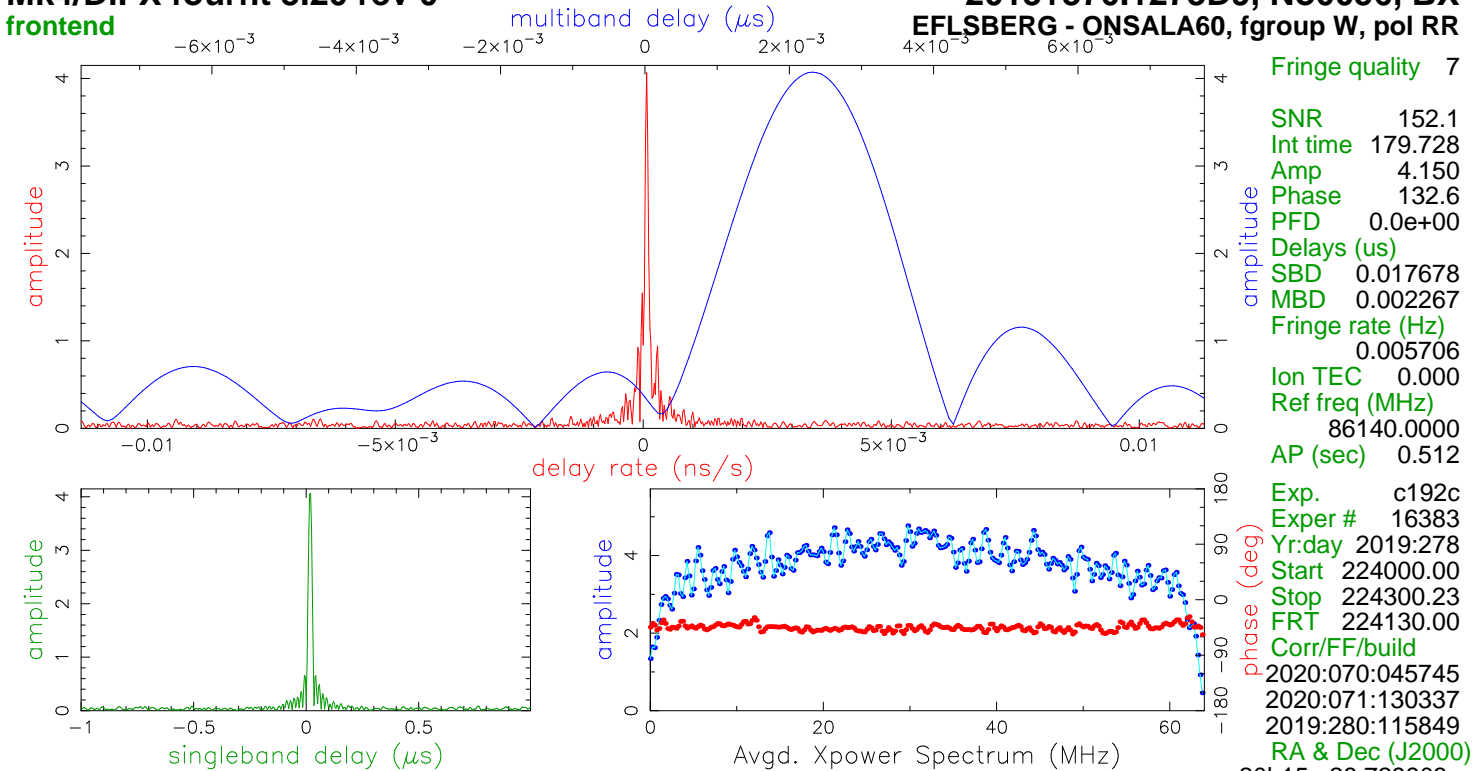
ph/seg (deg) 24.5 1.6 Search (1024X32) 4.420 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 9.5 2.8 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 6.3 1.0 Inc. seg. avg. 4.889 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 4.2 1.7 Inc. frq. avg. 4.480 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 274.4 el 47.9 pa 52.7 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) 508.344 -1002.783 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/BX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/BX.W.81.1273D9

Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.1273D9, No0056, BX

EFLSBERG - ONSALA60, fgroup W, pol RR



Fringe quality 7

SNR 152.1

Int time 179.728

Amp 4.150

Phase 132.6

PFD 0.0e+00

Delays (us)

SBD 0.017678

MBD 0.002267

Fringe rate (Hz)

0.005706

Ion TEC 0.000

Ref freq (MHz)

86140.0000

AP (sec) 0.512

Exp. c192c

Exper # 16383

Yr:day 2019:278

Start 224000.00

Stop 224300.23

FRT 224130.00

Corr/FF/build

2020:070:045745

2020:071:130337

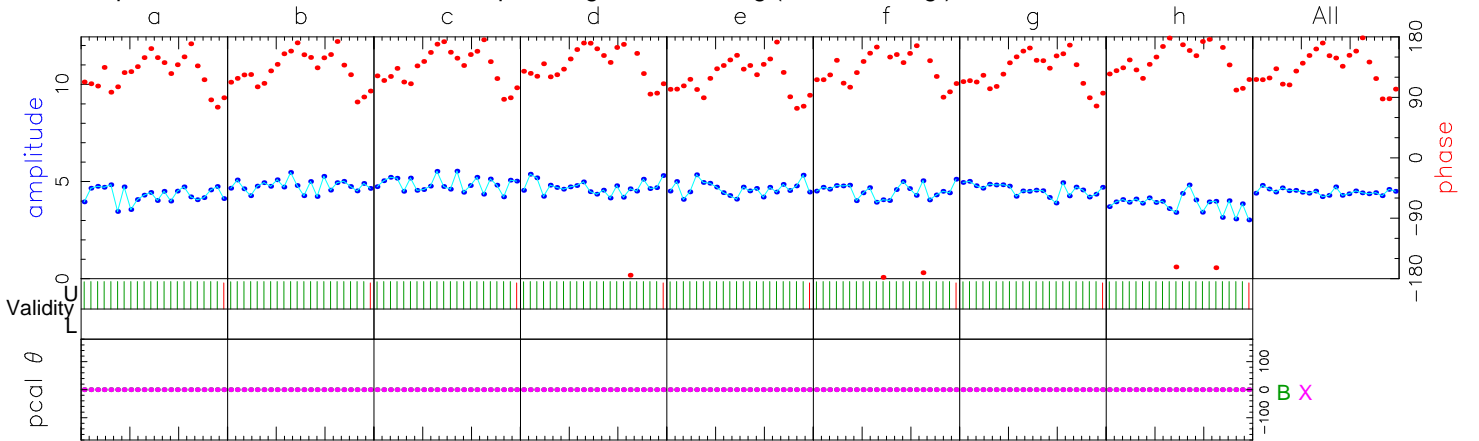
2019:280:115849

RA & Dec (J2000)

20h15m28.729803s

+37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	124.8	132.1	135.1	140.3	118.0	136.3	128.0	148.7	Phase	132.6
	3.9	4.4	4.4	4.3	4.2	4.1	4.2	3.5	Ampl.	4.1
	261.3	261.5	261.8	261.5	261.5	261.6	261.8	260.9	Sbd box	261.5
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
B	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
B:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
B:X	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	
X	1000	1000	1000	1000	1000	1000	1000	1000		
B	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	6.55965890085E+02		Apriori delay (usec)		6.55947998123E+02		Resid mbdelay (usec)		2.26696E-03	+/- 7.1E-06
Sband delay (usec)	6.55965676623E+02		Apriori clock (usec)		-1.5610821E+01		Resid sbdelay (usec)		1.76785E-02	+/- 5.7E-05
Phase delay (usec)	6.55948002401E+02		Apriori clockrate (us/s)		-7.2800002E-07		Resid phdelay (usec)		4.27705E-06	+/- 2.4E-08
Delay rate (us/s)	-7.16737266206E-02		Apriori rate (us/s)		-7.16737928665E-02		Resid rate (us/s)		6.62459E-08	+/- 2.3E-10
Total phase (deg)	333.6		Apriori accel (us/s/s)		-8.39574980158E-06		Resid phase (deg)		132.6	+/- 0.8

RMS Theor. Amplitude 4.150 +/- 0.027

ph/seg (deg) 25.0 1.8 Search (1024X32) 4.044

amp/seg (%) 8.6 3.1 Interp. 0.000

ph/frq (deg) 10.2 1.1 Inc. seg. avg. 4.473

amp/frq (%) 7.0 1.9 Inc. frq. avg. 4.113

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(MISamp/s): 128 dr window (ns/s) -0.011 0.011

Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00

B: az 274.4 el 47.9 pa 52.7 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) 508.344 -1002.783 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/BX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/BX.W.95.1273D9





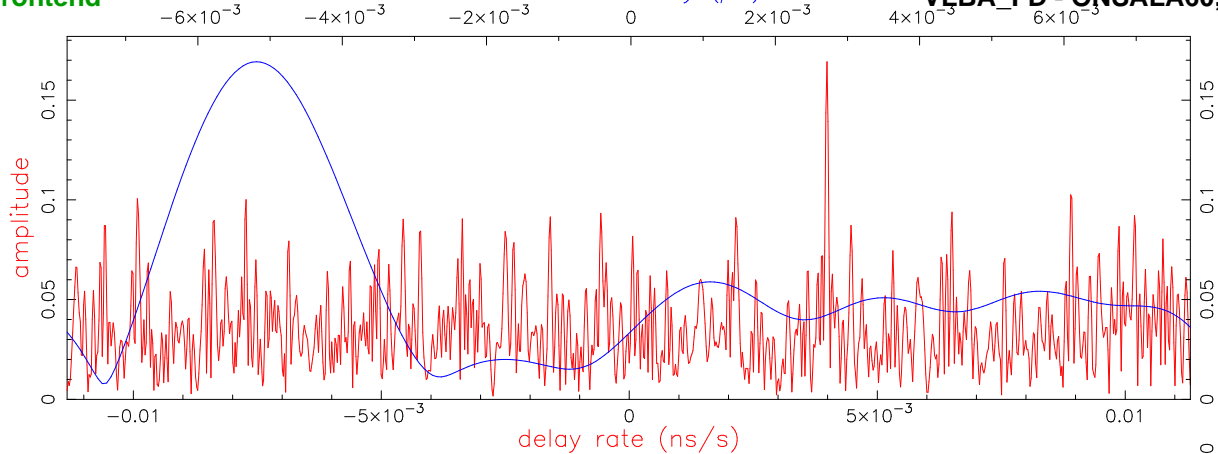
Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.1273D9, No0056, fX

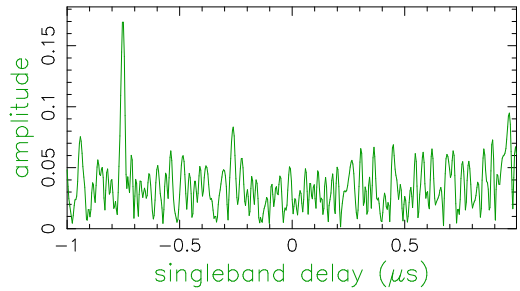
VLBA\_FD - ONSALA60, fgroup W, pol LR

multiband delay ( $\mu$ s)

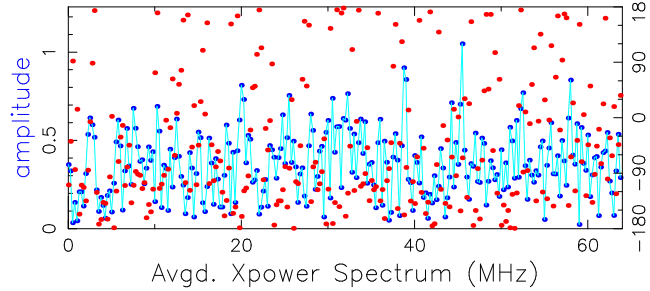


Fringe quality 0

SNR 6.3  
Int time 179.181  
Amp 0.182  
Phase -76.7  
PFD 3.4e-02  
Delays (us)  
SBD -0.751929  
MBD -0.005194  
Fringe rate (Hz) 0.344196  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512

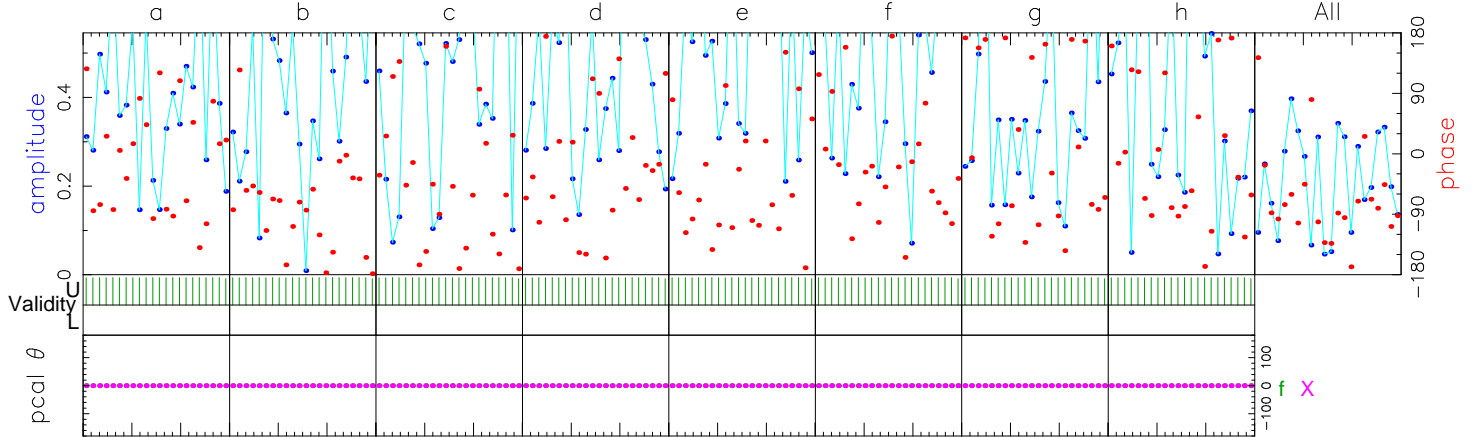


delay rate (ns/s)



Exp. c192c  
Exper # 16383  
Yr:day 2019:278  
Start 224000.00  
Stop 224300.23  
FRT 224130.00  
Corr/FF/build  
2020:070:045745  
2020:071:130344  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-23.5	-94.2	-108.8	-51.7	-87.4	-45.9	-116.9	-58.3	Phase	-76.7
	0.1	0.3	0.2	0.2	0.3	0.2	0.2	0.2	Ampl.	0.2
	17.0	63.2	284.1	340.2	64.5	120.5	444.5	15.4	Sbd box	64.5
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
f	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
f:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
f:X	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	
X	1000	1000	1000	1000	1000	1000	1000	1000		
f	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

Group delay (usec)(sbd)	1.92195370683E+02	Apriori delay (usec)	1.92950564621E+02	Resid mbdelay (usec)	-5.19394E-03	+/-	1.7E-04
Sband delay (usec)	1.92198635871E+02	Apriori clock (usec)	-3.1937637E+01	Resid sbdelay (usec)	-7.51929E-01	+/-	1.4E-03
Phase delay (usec)	1.92950562147E+02	Apriori clockrate (us/s)	-6.1894950E-07	Resid phdelay (usec)	-2.47473E-06	+/-	5.8E-07
Delay rate (us/s)	1.44501675671E+00	Apriori rate (us/s)	1.44501276093E+00	Resid rate (us/s)	3.99578E-06	+/-	5.6E-09
Total phase (deg)	152.4	Apriori accel (us/s/s)	-2.39329506272E-05	Resid phase (deg)	-76.7	+/-	18.1

ph/seg (deg)	59.9	RMS	42.5	Theor.	Amplitude	0.182 +/- 0.029	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000	
amp/seg (%)	66.9		74.2		Search (1024X32)	0.164	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	SampCntNorm: enabled	mb window (us)	-0.008	0.008	
ph/frq (deg)	36.1		25.6		Inc. seg. avg.	0.177	Sample rate(MISamp/s): 128		dr window (ns/s)	-0.011	0.011	
amp/frq (%)	31.2		44.7		Inc. frq. avg.	0.184	Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00	0.00

f: az 66.4 el 45.6 pa -81.9 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -10419.047 -3716.349 simultaneous interpolator

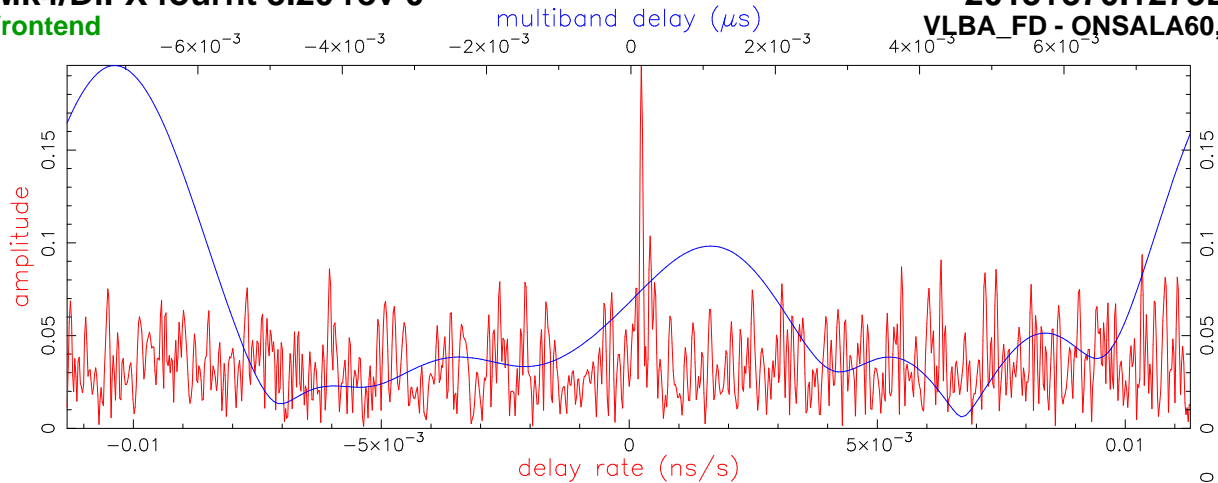
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/fX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/fX.W.147.1273D9

Mk4/DiFX fourfit 3.20 rev 0

frontend

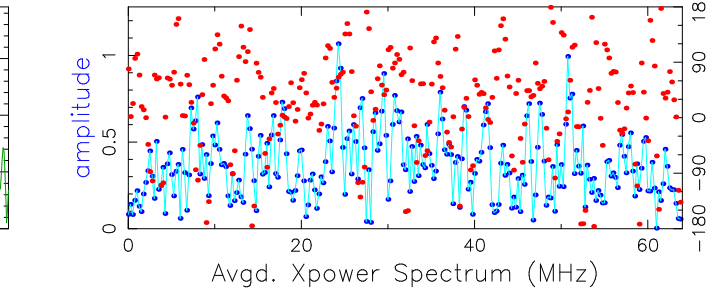
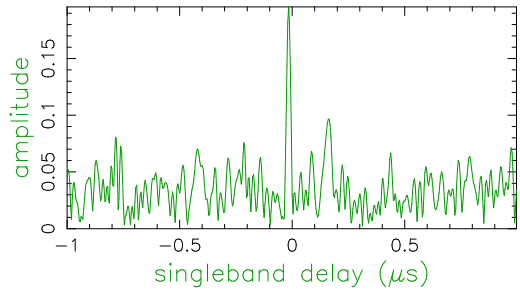
2013+370.1273D9, No0056, fX

VLBA\_FD - ONSALA60, fgroup W, pol RL



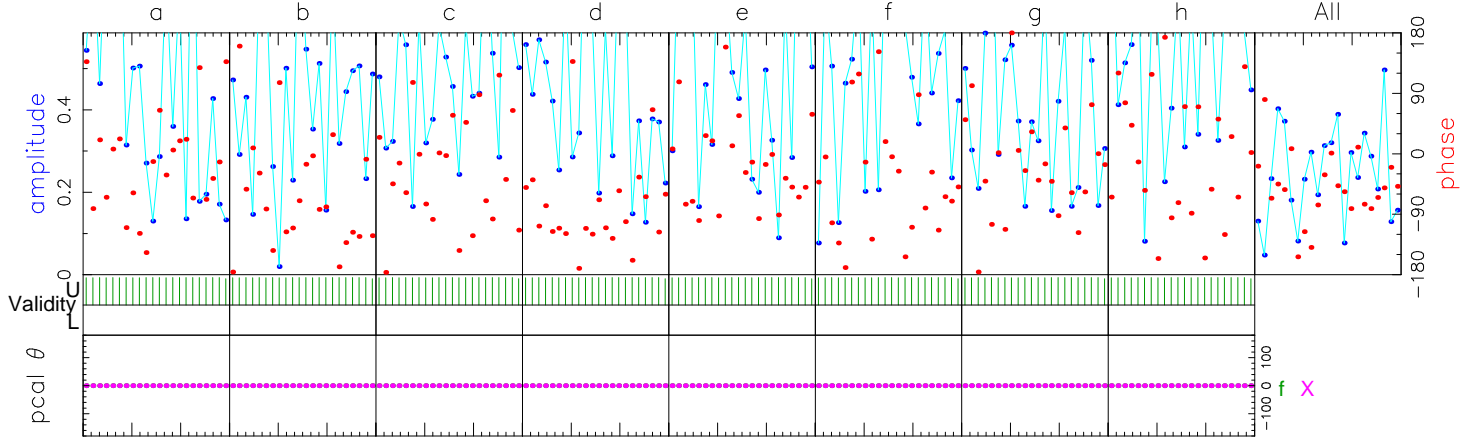
Fringe quality 0

SNR 7.2  
 Int time 179.181  
 Amp 0.196  
 Phase -54.6  
 PFD 1.2e-04  
 Delays (us)  
 SBD -0.015798  
 MBD -0.007158  
 Fringe rate (Hz)  
 0.020185  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130346  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-31.1	-82.3	-27.1	-96.8	-34.2	-65.5	-32.2	-56.3	Phase	-54.6
	0.3	0.2	0.2	0.3	0.3	0.2	0.2	0.1	Ampl.	0.2
	251.6	250.8	214.0	252.6	252.1	34.7	8.6	202.4	Sbd box	253.0
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
f	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
f:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
f:X	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	
X	1000	1000	1000	1000	1000	1000	1000	1000		
f	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	1.92927781949E+02		Apriori delay (usec)		1.92950564621E+02		Resid mbdelay (usec)		-7.15767E-03	+/- 1.5E-04
Sband delay (usec)	1.92934766371E+02		Apriori clock (usec)		-3.1937637E+01		Resid sbdelay (usec)		-1.57983E-02	+/- 1.2E-03
Phase delay (usec)	1.92950562859E+02		Apriori clockrate (us/s)		-6.1894950E-07		Resid phdelay (usec)		-1.76200E-06	+/- 5.2E-07
Delay rate (us/s)	1.44501299526E+00		Apriori rate (us/s)		1.44501276093E+00		Resid rate (us/s)		2.34324E-07	+/- 5.0E-09
Total phase (deg)	174.5		Apriori accel (us/s/s)		-2.39329506272E-05		Resid phase (deg)		-54.6	+/- 16.0

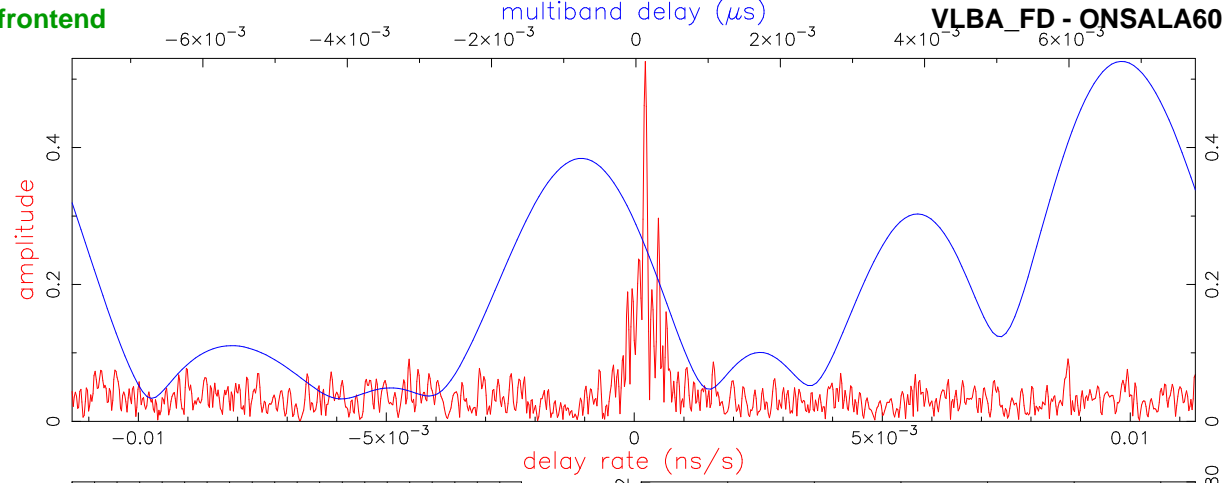
ph/seg (deg) 50.4 37.5 Amplitude 0.196 +/- 0.027 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 64.2 65.5 Search (1024X32) 0.189 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 28.6 22.6 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 34.8 39.5 Inc. seg. avg. 0.203 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 f: az 66.4 el 45.6 pa -81.9 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -10419.047 -3716.349 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/fX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/fX.W.158.1273D9 simultaneous interpolator

Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.1273D9, No0056, fX

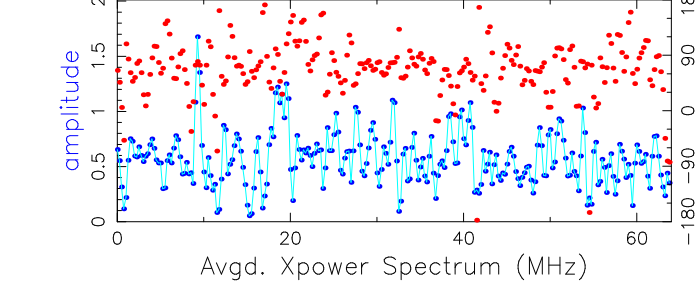
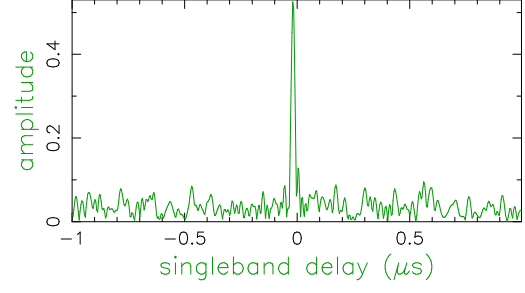
VLBA\_FD - ONSALA60, fgroup W, pol LL



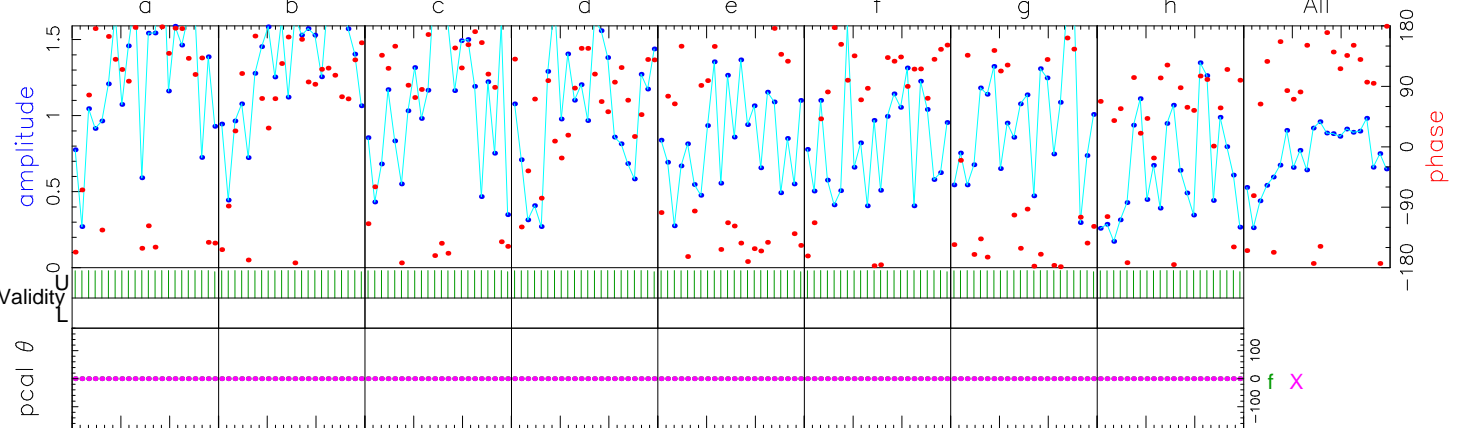
Fringe quality 7

SNR 19.4  
 Int time 179.181  
 Amp 0.530  
 Phase 141.6  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.018340  
 MBD 0.006763  
 Fringe rate (Hz)  
 0.019750  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130337  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



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



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

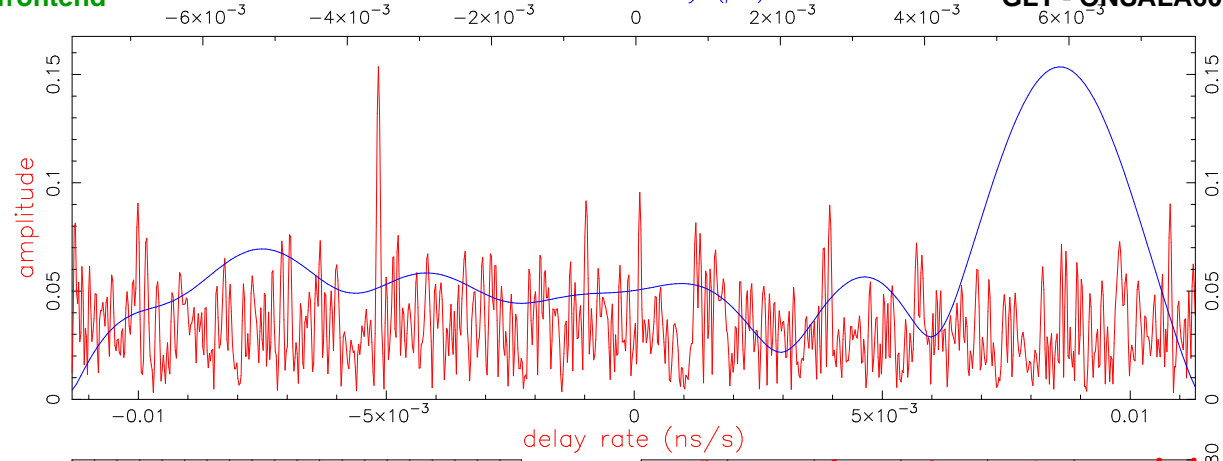
Group delay (usec)(sbd)	1.92926077274E+02	Apriori delay (usec)	1.92950564621E+02	Resid mbdelay (usec)	6.76265E-03	+/-	5.6E-05
Sband delay (usec)	1.92932224371E+02	Apriori clock (usec)	-3.1937637E+01	Resid sbdelay (usec)	-1.83403E-02	+/-	4.4E-04
Phase delay (usec)	1.92950569187E+02	Apriori clockrate (us/s)	-6.1894950E-07	Resid phdelay (usec)	4.56542E-06	+/-	1.9E-07
Delay rate (us/s)	1.44501299022E+00	Apriori rate (us/s)	1.44501276093E+00	Resid rate (us/s)	2.29284E-07	+/-	1.8E-09
Total phase (deg)	10.7	Apriori accel (us/s/s)	-2.39329506272E-05	Resid phase (deg)	141.6	+/-	5.9

ph/seg (deg)	53.9	RMS	13.8	Theor.	13.8	Amplitude	0.530 +/- 0.027	Pcal mode: MANUAL, MANUAL	PC period (AP's)	5, 5		
amp/seg (%)	52.9	Search (1024X32)	0.514	Interp.	0.000	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		sb window (us)	-1.000	1.000		
ph/frq (deg)	46.6	Inc. seg. avg.	0.720	Inc. frq. avg.	0.657	Bits/sample: 2x2		SampCntNorm: enabled	mb window (us)	-0.008	0.008	
amp/frq (%)	40.2	Inc. frq. avg.	0.657			Sample rate(MISamp/s): 128		dr window (ns/s)	-0.011	0.011		
						Data rate(Mb/s): 2048		nlags: 256	t_cohere infinite	ion window (TEC)	0.00	0.00

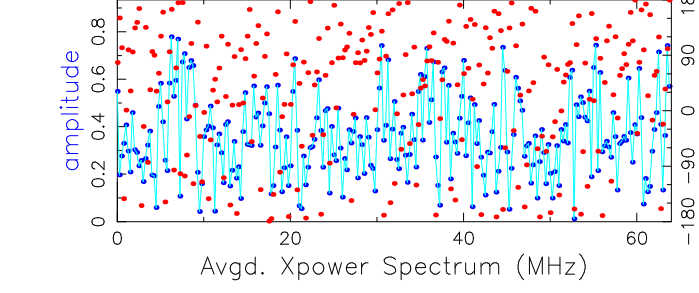
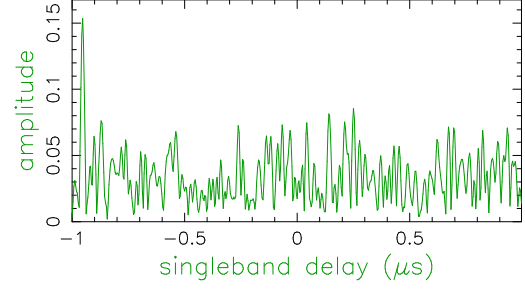
f: az 66.4 el 45.6 pa -81.9 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -10419.047 -3716.349 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/fX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/fX.W.94.1273D9

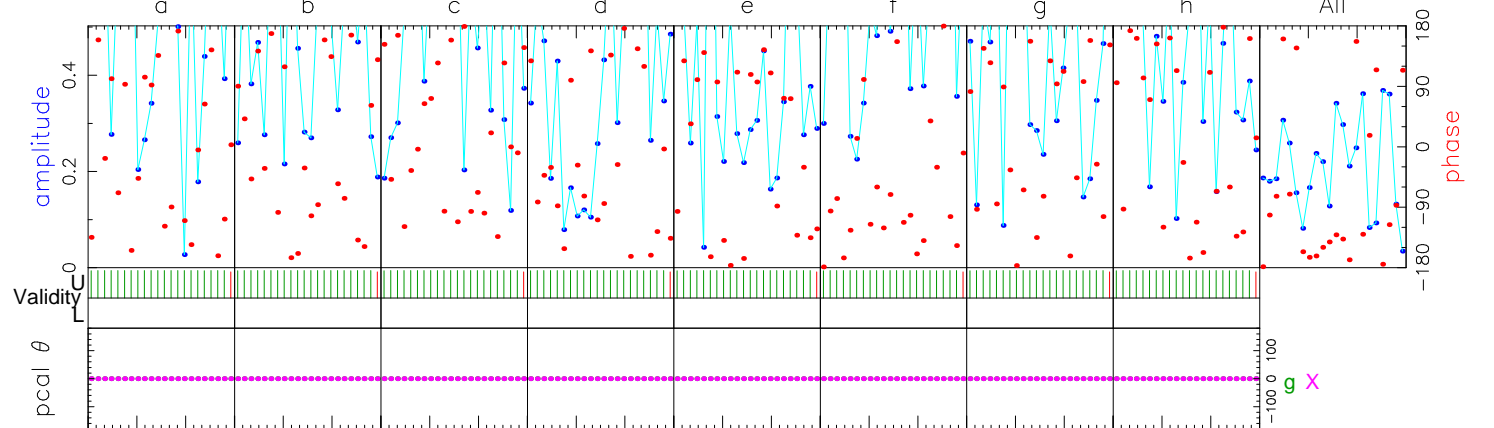
multiband delay ( $\mu\text{s}$ )



Fringe quality 0  
 SNR 5.6  
 Int time 179.597  
 Amp 0.168  
 Phase -147.9  
 PFD 8.9e-01  
 Delays (us)  
 SBD -0.953342  
 MBD 0.005874  
 Fringe rate (Hz)  
 -0.445961  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130348  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

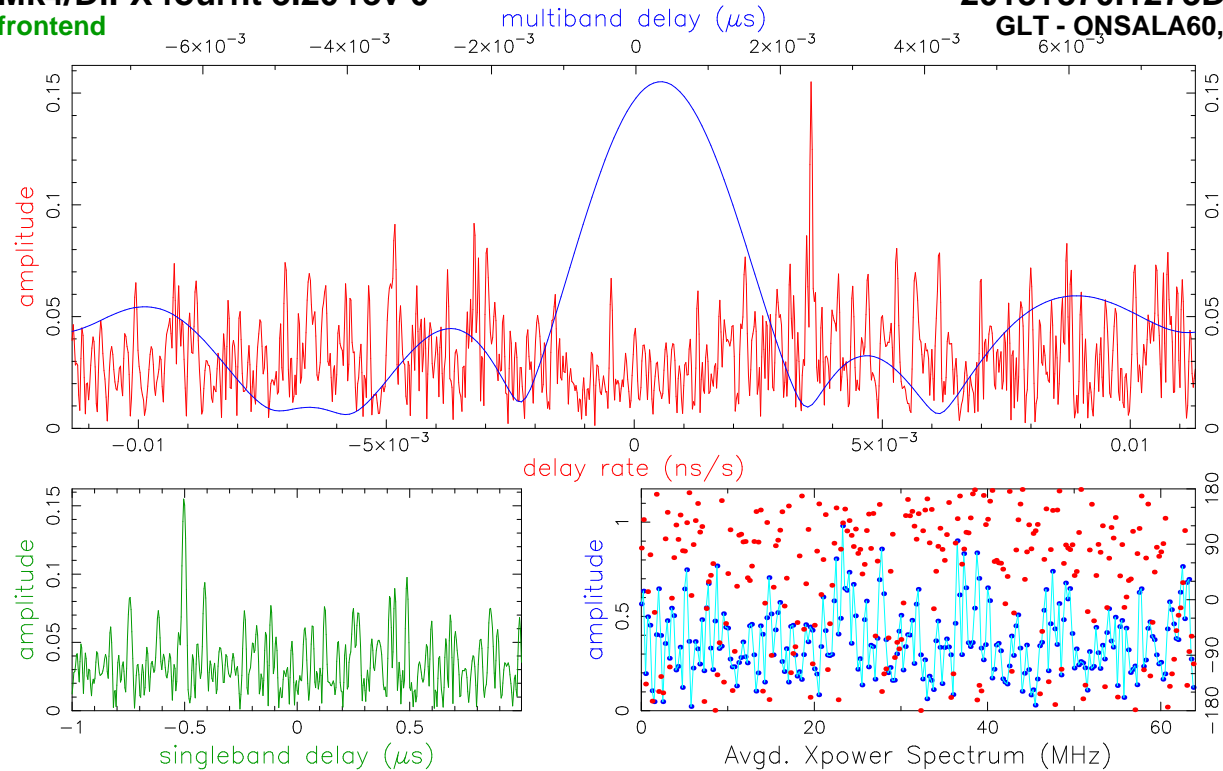


Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



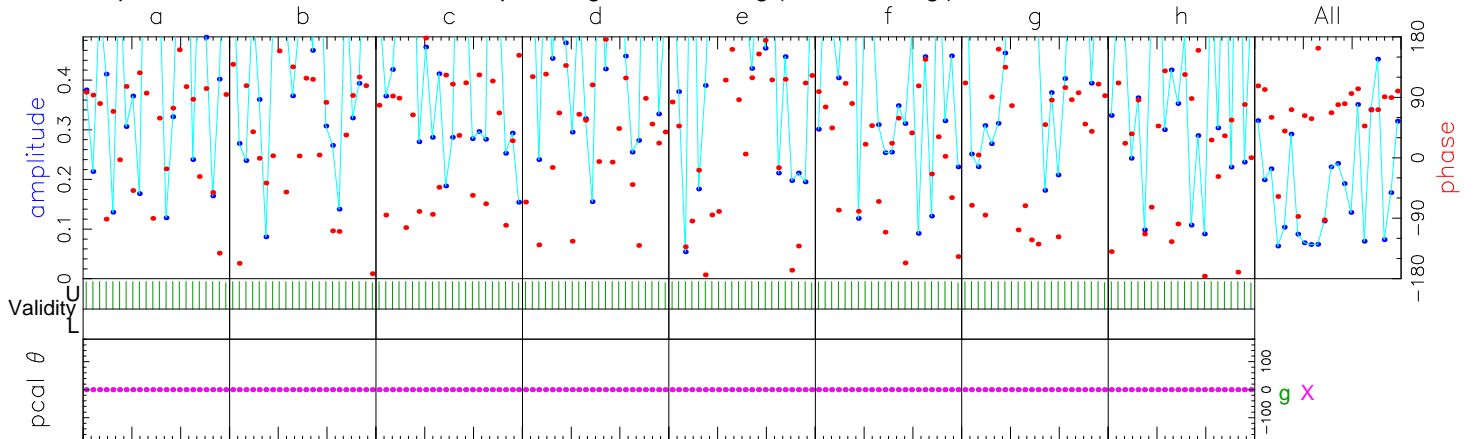
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-158.9	-157.0	-100.4	-152.8	165.1	-111.8	-166.2	-166.3	Phase	-147.9
	0.2	0.2	0.1	0.1	0.2	0.4	0.1	0.2	Ampl.	0.2
	78.0	197.1	321.2	152.1	376.9	13.0	185.9	294.1	Sbd box	12.9
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
g	0	0	0	0	0	0	0	0	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
g:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
g:X	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	
X	1000	1000	1000	1000	1000	1000	1000	1000		
g	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	1.19211106808E+03		Apriori delay (usec)		1.19305831920E+03		Resid mbdelay (usec)		5.87388E-03	+/- 1.9E-04
Sband delay (usec)	1.19210497670E+03		Apriori clock (usec)		-3.1108150E+01		Resid sbdelay (usec)		-9.53342E-01	+/- 1.5E-03
Phase delay (usec)	1.19305831443E+03		Apriori clockrate (us/s)		-4.5300002E-07		Resid phdelay (usec)		-4.76991E-06	+/- 6.6E-07
Delay rate (us/s)	6.81366370416E-01		Apriori rate (us/s)		6.81371547585E-01		Resid rate (us/s)		-5.17717E-06	+/- 6.3E-09
Total phase (deg)	73.7		Apriori accel (us/s/s)		2.41376571311E-06		Resid phase (deg)		-147.9	+/- 20.4

ph/seg (deg) 59.5 47.7 Search (1024X32) 0.151 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 73.3 83.3 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 33.4 28.8 Inc. seg. avg. 0.171 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 47.7 50.3 Inc. frq. avg. 0.170 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 g: az 157.0 el 49.9 pa -6.5 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -4898.630 1094.757 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/gX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/gX.W.168.1273D9



Fringe quality 0  
 SNR 5.7  
 Int time 179.650  
 Amp 0.162  
 Phase 81.3  
 PFD 7.4e-01  
 Delays (us)  
 SBD -0.502767  
 MBD 0.000388  
 Fringe rate (Hz)  
 0.306643  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130351  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	83.2	90.5	82.7	60.9	141.9	50.1	98.7	63.3	Phase	81.3
	0.2	0.2	0.2	0.3	0.1	0.2	0.2	0.1	Ampl.	0.2
	477.4	457.9	336.9	168.9	326.7	411.0	201.2	98.6	Sbd box	128.3
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
g	0	0	0	0	0	0	0	0	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
g:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
g:X	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	
X	1000	1000	1000	1000	1000	1000	1000	1000		
g	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	1.19255870725E+03		Apriori delay (usec)		1.19305831920E+03		Resid mbdelay (usec)		3.88056E-04	+/- 1.9E-04
Sband delay (usec)	1.1925555220E+03		Apriori clock (usec)		-3.1108150E+01		Resid sbdelay (usec)		-5.02767E-01	+/- 1.5E-03
Phase delay (usec)	1.19305832182E+03		Apriori clockrate (us/s)		-4.5300002E-07		Resid phdelay (usec)		2.62231E-06	+/- 6.5E-07
Delay rate (us/s)	6.81375107407E-01		Apriori rate (us/s)		6.81371547585E-01		Resid rate (us/s)		3.55982E-06	+/- 6.2E-09
Total phase (deg)	302.9		Apriori accel (us/s/s)		2.41376571311E-06		Resid phase (deg)		81.3	+/- 20.1

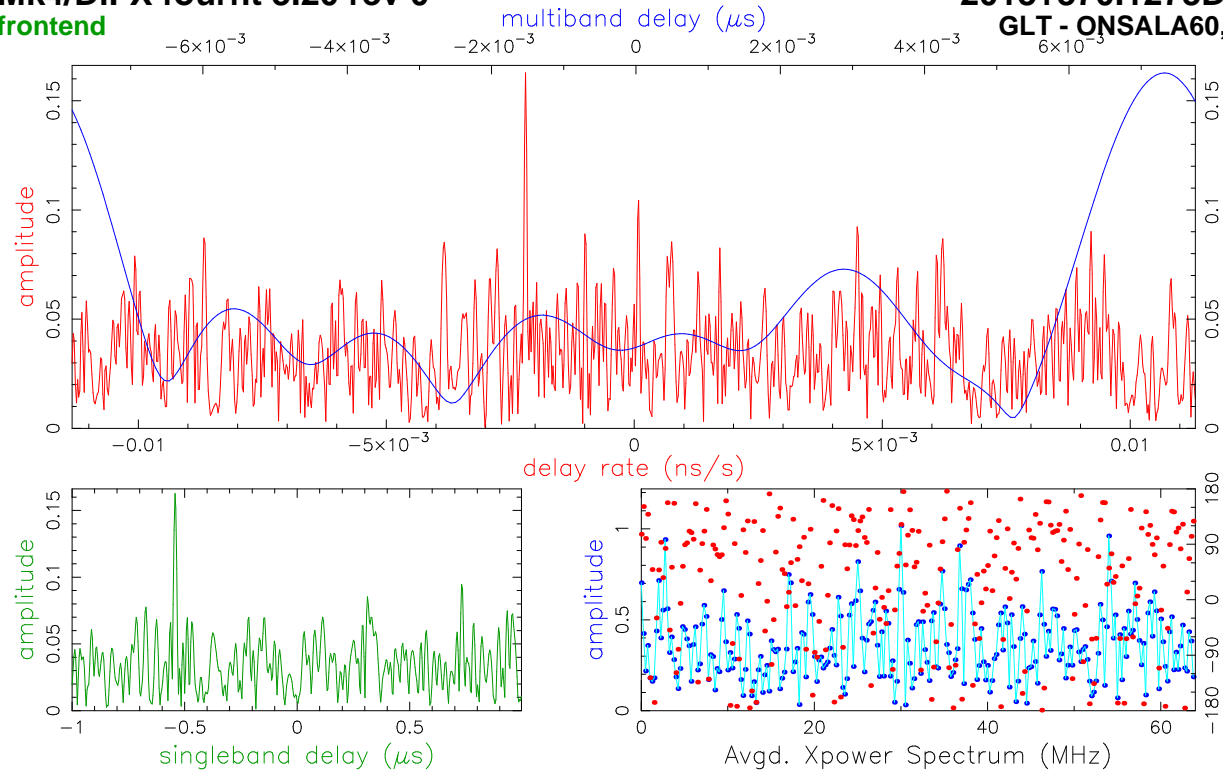
ph/seg (deg) 64.6 47.0 Search (1024X32) 0.153 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 74.2 82.1 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 31.0 28.4 Inc. seg. avg. 0.148 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 26.9 49.5 Inc. frq. avg. 0.159 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 157.0 el 49.9 pa -6.5 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -4898.630 1094.757 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/gX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/gX.W.188.1273D9

# Mk4/DiFX fourfit 3.20 rev 0

frontend

## 2013+370.1273D9, No0056, gX

GLT - ONSALA60, fgroup W, pol LR

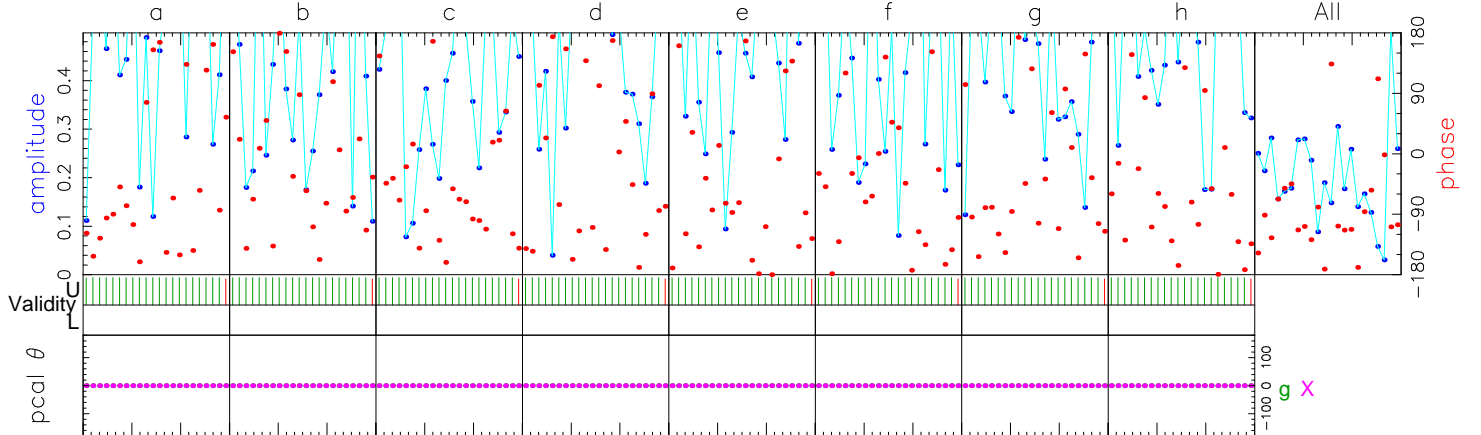


Fringe quality 0

SNR 6.0  
 Int time 179.597  
 Amp 0.166  
 Phase -110.2  
 PFD 2.3e-01  
 Delays (us)  
 SBD -0.542145  
 MBD 0.007339  
 Fringe rate (Hz)  
 -0.189973  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130353  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-125.3	-37.8	-79.3	-136.6	-138.9	-85.7	-109.7	-111.8	Phase	-110.2
	0.2	0.1	0.2	0.2	0.2	0.2	0.2	0.2	Ampl.	0.2
	214.9	392.2	101.0	122.0	336.7	276.3	56.9	343.7	Sbd box	118.2
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
g	0	0	0	0	0	0	0	0	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
g:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
g:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
g	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
X	1000	1000	1000	1000	1000	1000	1000	1000		
g	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

Group delay (usec)(sbd)	1.19251878348E+03	Apriori delay (usec)	1.19305831920E+03	Resid mbdelay (usec)	7.33929E-03	+/-	1.8E-04
Sband delay (usec)	1.19251617420E+03	Apriori clock (usec)	-3.1108150E+01	Resid sbdelay (usec)	-5.42145E-01	+/-	1.4E-03
Phase delay (usec)	1.19305831564E+03	Apriori clockrate (us/s)	-4.5300002E-07	Resid phdelay (usec)	-3.55289E-06	+/-	6.2E-07
Delay rate (us/s)	6.81369342186E-01	Apriori rate (us/s)	6.81371547585E-01	Resid rate (us/s)	-2.20540E-06	+/-	5.9E-09
Total phase (deg)	111.4	Apriori accel (us/s/s)	2.41376571311E-06	Resid phase (deg)	-110.2	+/-	19.1

ph/seg (deg)	55.8	Theor.	44.8	Amplitude	0.166 +/- 0.028	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5		
amp/seg (%)	65.2		78.2	Search (1024X32)	0.152	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000		
ph/frq (deg)	37.7		27.0	Inc. seg. avg.	0.159	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008	
amp/frq (%)	31.6		47.2	Inc. frq. avg.	0.165	Sample rate (MSamp/s):	128	dr window (ns/s)	-0.011 0.011		
						Data rate (Mb/s):	2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00 0.00

g: az 157.0 el 49.9 pa -6.5 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -4898.630 1094.757 simultaneous interpolator

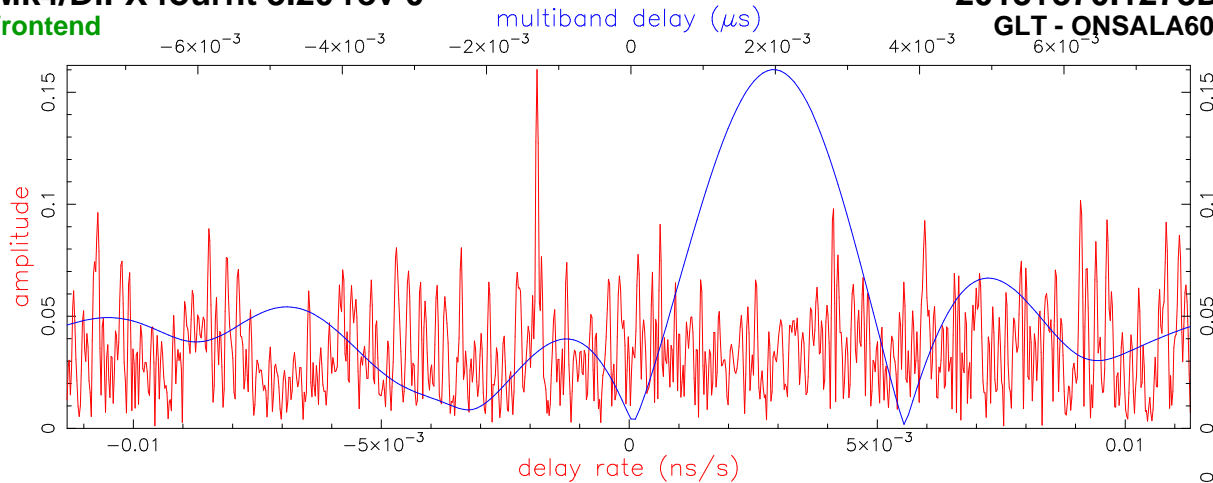
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/gX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/gX.W.211.1273D9

# Mk4/DiFX fourfit 3.20 rev 0

frontend

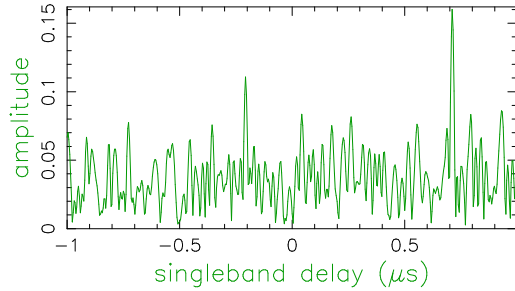
## 2013+370.1273D9, No0056, gX

GLT - ONSALA60, fgroup W, pol RL

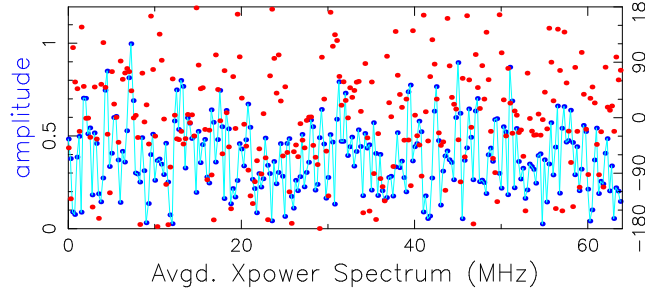


Fringe quality 0

SNR 5.9  
 Int time 179.650  
 Amp 0.162  
 Phase -104.5  
 PFD 4.2e-01  
 Delays (us)  
 SBD 0.711226  
 MBD 0.001981  
 Fringe rate (Hz)  
 -0.159824  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

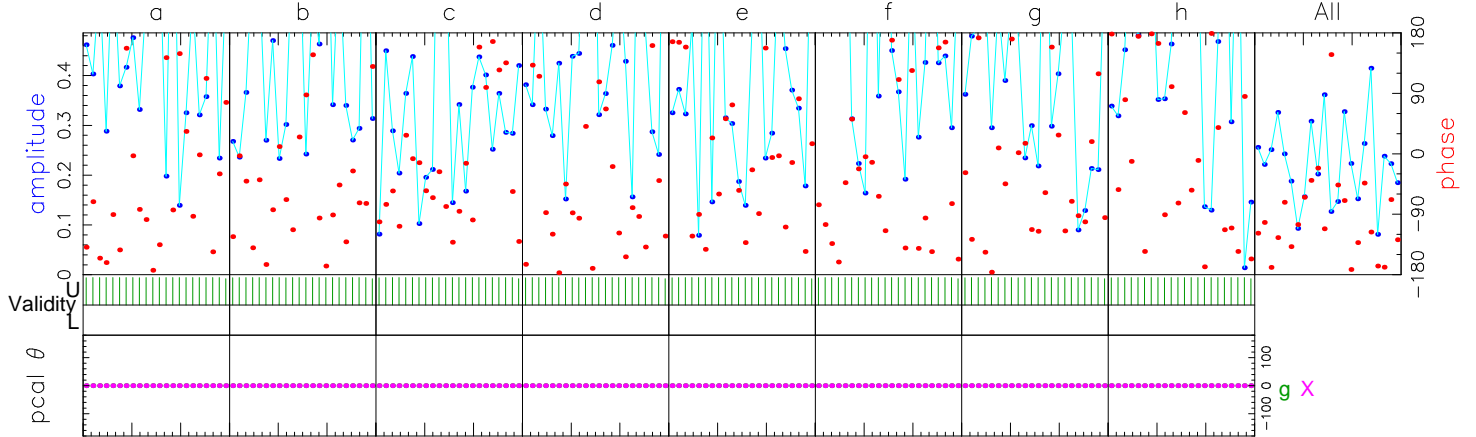


delay rate (ns/s)



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130356  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-120.7	-89.2	-68.1	-135.9	-66.1	-118.0	-89.1	-112.9	Phase	-104.5
	0.2	0.2	0.1	0.2	0.1	0.3	0.2	0.1	Ampl.	0.2
	425.8	321.0	346.2	219.5	27.0	336.8	227.5	102.5	Sbd box	439.1
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
g	0	0	0	0	0	0	0	0	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
g:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
g:X	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	
X	1000	1000	1000	1000	1000	1000	1000	1000		
g	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd)	1.19376342562E+03	Apriori delay (usec)	1.19305831920E+03	Resid mbdelay (usec)	1.98142E-03	+/-	1.8E-04
Sband delay (usec)	1.19376954495E+03	Apriori clock (usec)	-3.1108150E+01	Resid sbdelay (usec)	7.11226E-01	+/-	1.5E-03
Phase delay (usec)	1.19305831583E+03	Apriori clockrate (us/s)	-4.5300002E-07	Resid phdelay (usec)	-3.36833E-06	+/-	6.3E-07
Delay rate (us/s)	6.81369692185E-01	Apriori rate (us/s)	6.81371547585E-01	Resid rate (us/s)	-1.85540E-06	+/-	6.0E-09
Total phase (deg)	117.2	Apriori accel (us/s/s)	2.41376571311E-06	Resid phase (deg)	-104.5	+/-	19.5

ph/seg (deg)	RMS 50.1	Theor. 45.8	Amplitude Search (1024X32)	0.162 +/- 0.028	0.155	PCal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000	
amp/seg (%)	66.7	79.9	Interp.	0.000	0.174	PCal rate: 0.000E+00, 0.000E+00 (us/s)	SampCntNorm: enabled	mb window (us)	-0.008	0.008	
ph/frq (deg)	28.2	27.6	Inc. seg. avg.	0.174	0.157	Bits/sample: 2x2	Sample rate(MISamp/s): 128	dr window (ns/s)	-0.011	0.011	
amp/frq (%)	34.3	48.2	Inc. frq. avg.	0.157		Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00	0.00

g: az 157.0 el 49.9 pa -6.5 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -4898.630 1094.757 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/gX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/gX.W.228.1273D9



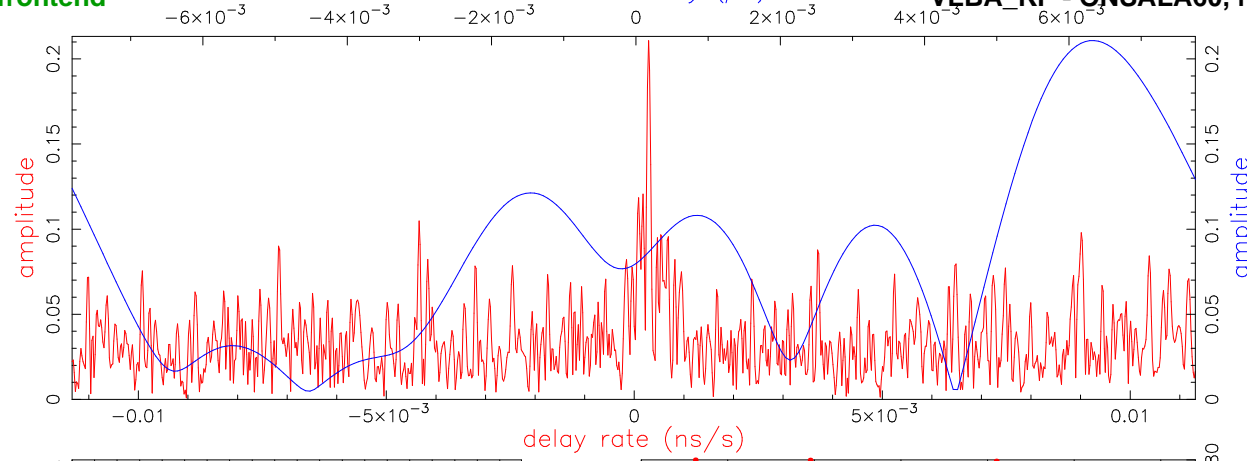
Mk4/DiFX fourfit 3.20 rev 0

frontend

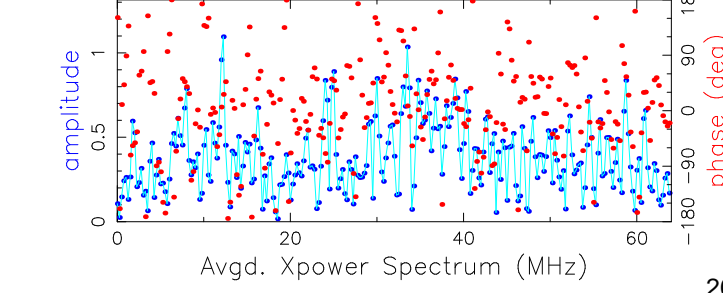
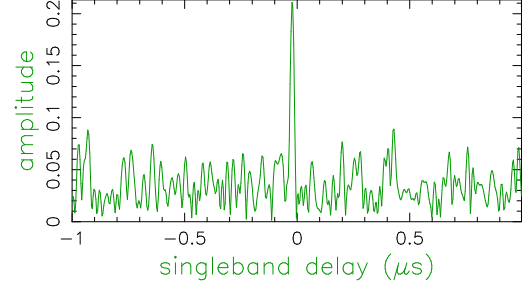
2013+370.1273D9, No0056, kX

VLBA\_KP - ONSALA60, fgroup W, pol LL

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

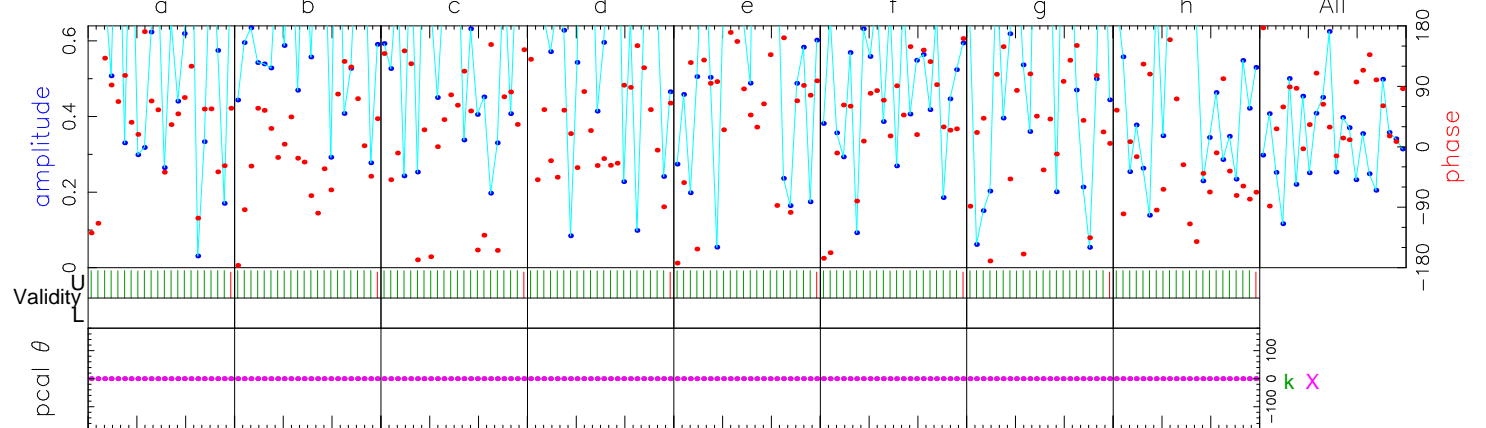


Fringe quality 9  
 SNR 7.8  
 Int time 179.155  
 Amp 0.213  
 Phase 52.0  
 PFD 1.0e-06  
 Delays (us)  
 SBD -0.021975  
 MBD 0.006313  
 Fringe rate (Hz) 0.024254  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130349  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



Avgd. Xpower Spectrum (MHz)

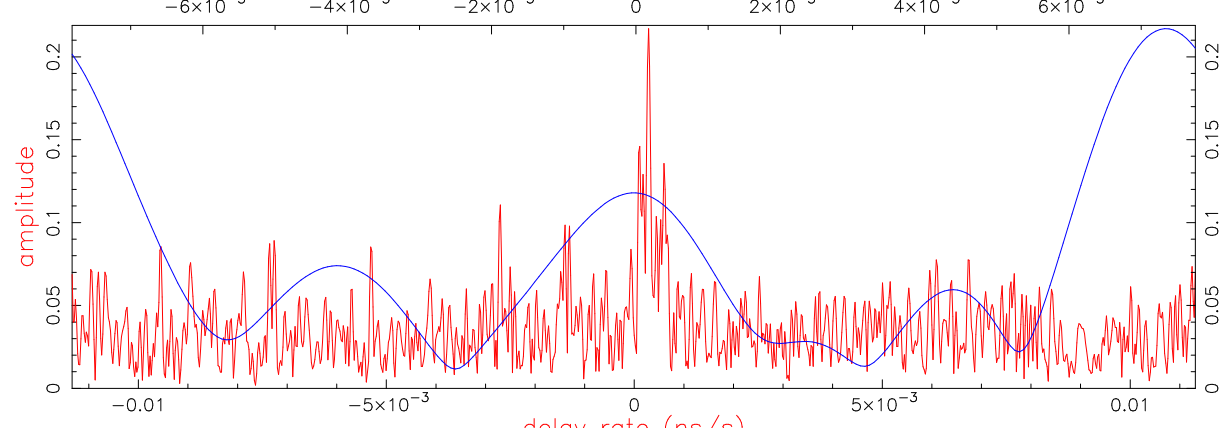
Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



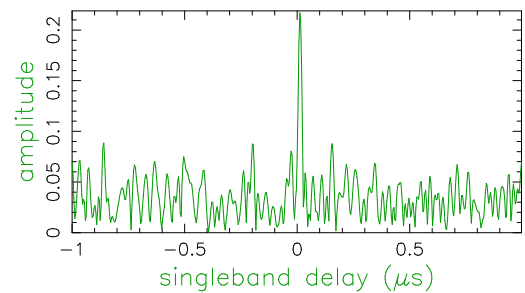
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
k	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
k:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
k:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
k	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
k	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	-1.29131310854E+03								6.31305E-03	+/- 1.4E-04
Sband delay (usec)	-1.29131014634E+03								-2.19747E-02	+/- 1.1E-03
Phase delay (usec)	-1.29128816991E+03								1.67796E-06	+/- 4.7E-07
Delay rate (us/s)	1.50934362081E+00								2.81568E-07	+/- 4.6E-09
Total phase (deg)			15.7						52.0	+/- 14.7
Apriori delay (usec)					-1.29128817159E+03					
Apriori clock (usec)					-3.2810787E+01					
Apriori clockrate (us/s)					-7.2257901E-07					
Apriori rate (us/s)					1.50934333924E+00					
Apriori accel (us/s/s)					-1.46992974816E-05					
Resid mbdelay (usec)										
Resid sbdelay (usec)										
Resid phdelay (usec)										
Resid rate (us/s)										
Resid phase (deg)										
Pcal mode: MANUAL, MANUAL										
Pcal rate: 0.000E+00, 0.000E+00 (us/s)										
Bits/sample: 2x2										
Sample rate(MISamp/s): 128										
Data rate(Mb/s): 2048										
PC period (AP's) 5, 5										
sb window (us)									-1.000	1.000
SampCntNorm: enabled									-0.008	0.008
mb window (us)									-0.011	0.011
dr window (ns/s)									0.00	0.00
ion window (TEC)									0.00	0.00
nlags: 256										
t_cohere infinite										

k: az 66.0 el 40.1 pa -76.8 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -10874.625 -3023.149 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/kX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/kX.W.172.1273D9

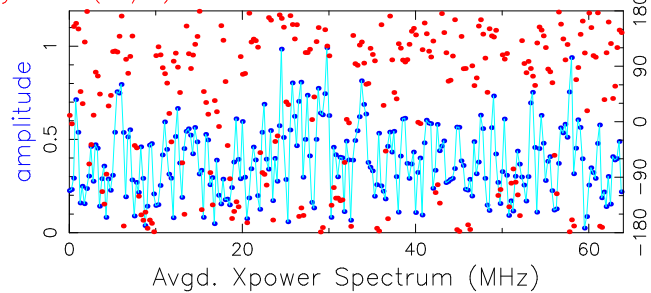
multiband delay ( $\mu$ s)



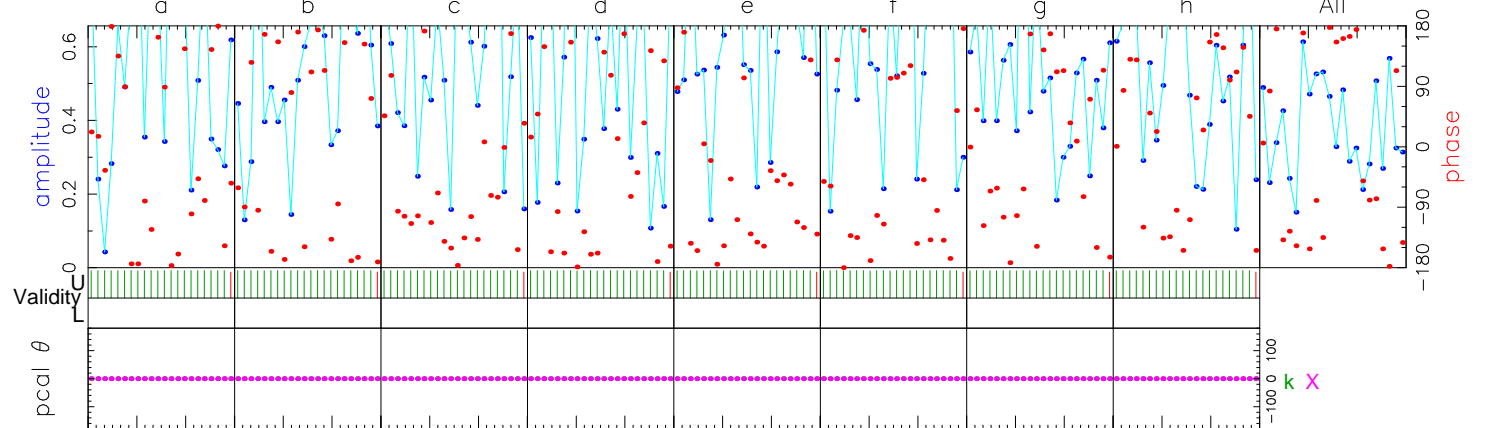
Fringe quality 9  
 SNR 8.0  
 Int time 179.155  
 Amp 0.219  
 Phase -157.8  
 PFD 1.9e-07  
 Delays (us)  
 SBD 0.012935  
 MBD 0.007340  
 Fringe rate (Hz) 0.024480  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130351  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



delay rate (ns/s)



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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-167.5	178.1	-113.4	174.9	-123.4	-166.0	-112.2	142.1	Phase	-157.8
	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	Ampl.	0.2
	339.4	259.3	260.5	295.5	258.1	260.9	157.7	406.1	Sbd box	260.3
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
k	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
k:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
k:X	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	
X	1000	1000	1000	1000	1000	1000	1000	1000		
k	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	-1.29128083188E+03		Apriori delay (usec)		-1.29128817159E+03		Resid mbdelay (usec)		7.33971E-03	+/- 1.4E-04
Sband delay (usec)	-1.29127523659E+03		Apriori clock (usec)		-3.2810787E+01		Resid sbdelay (usec)		1.29350E-02	+/- 1.1E-03
Phase delay (usec)	-1.29128817668E+03		Apriori clockrate (us/s)		-7.2257901E-07		Resid phdelay (usec)		-5.08750E-06	+/- 4.6E-07
Delay rate (us/s)	1.50934362342E+00		Apriori rate (us/s)		1.50934333924E+00		Resid rate (us/s)		2.84184E-07	+/- 4.4E-09
Total phase (deg)			Apriori accel (us/s/s)		-1.46992974816E-05		Resid phase (deg)		-157.8	+/- 14.3

ph/seg (deg) 64.1 33.5 Search (1024X32) 0.216 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 94.4 58.5 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 41.5 20.2 Inc. seg. avg. 0.326 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 36.8 35.3 Inc. frq. avg. 0.242 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 66.0 el 40.1 pa -76.8 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -10874.625 -3023.149 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/kX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/kX.W.193.1273D9

Mk4/DiFX fourfit 3.20 rev 0

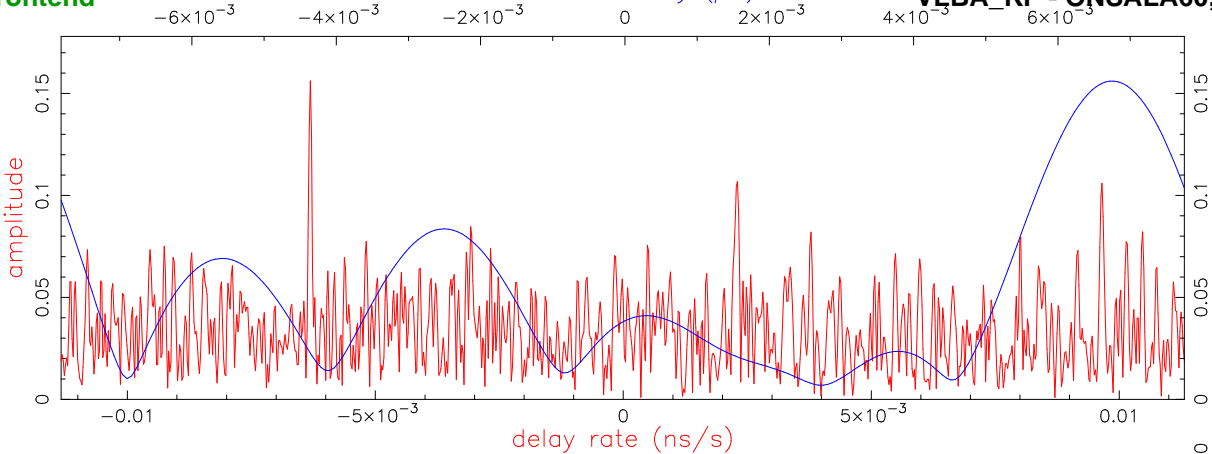
frontend

2013+370.1273D9, No0056, kX

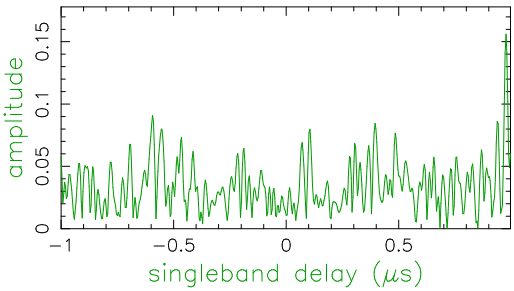
VLBA\_KP - ONSALA60, fgroup W, pol LR

multiband delay ( $\mu$ s)

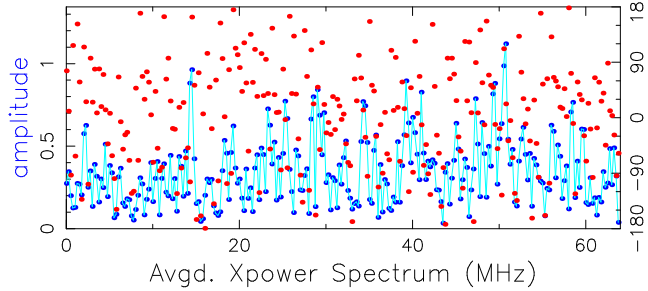
Fringe quality 0



SNR 5.7  
 Int time 179.155  
 Amp 0.178  
 Phase 32.5  
 PFD 7.4e-01  
 Delays (us)  
 SBD 0.976564  
 MBD 0.006752  
 Fringe rate (Hz)  
 -0.544301  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

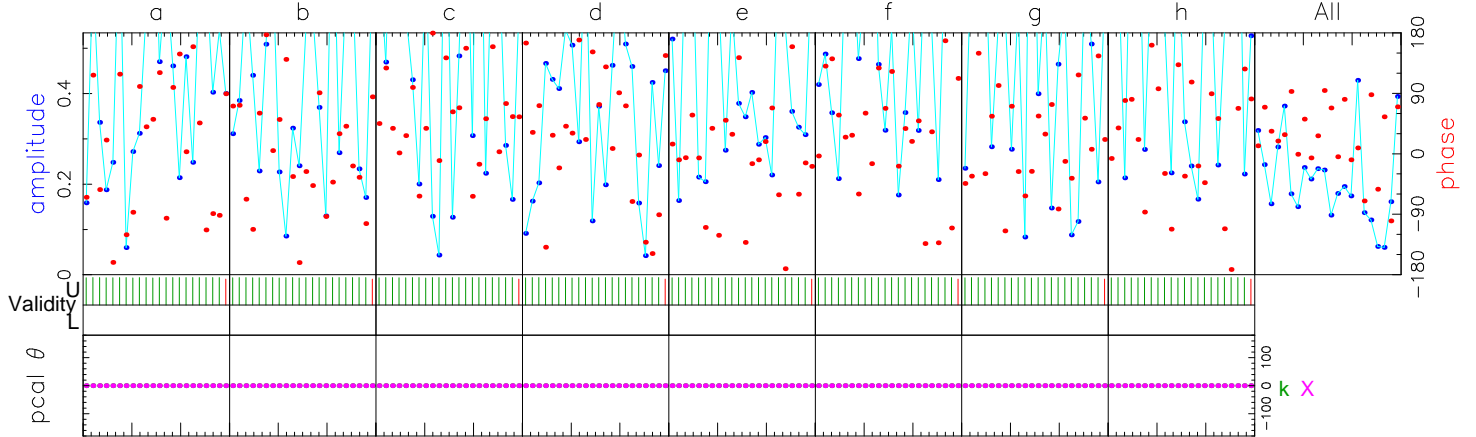


delay rate (ns/s)



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130354  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
k	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
k:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
k:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
k	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
k	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)	-1.29031266930E+03									
Sband delay (usec)	-1.29031160734E+03									
Phase delay (usec)	-1.29128817054E+03									
Delay rate (us/s)	1.50933702044E+00									
Total phase (deg)			-3.8							
Apriori delay (usec)										
Apriori clock (usec)										
Apriori clockrate (us/s)										
Apriori rate (us/s)										
Apriori accel (us/s/s)										
Resid mbdelay (usec)										
Resid sbdelay (usec)										
Resid phdelay (usec)										
Resid rate (us/s)										
Resid phase (deg)										
Pcal mode: MANUAL, MANUAL										
Pcal rate: 0.000E+00, 0.000E+00 (us/s)										
Bits/sample: 2x2										
Sample rate(MISamp/s): 128										
Data rate(Mb/s): 2048										
PC period (AP's) 5, 5										
sb window (us)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
ph/seg (deg)	52.3	47.0								
amp/seg (%)	70.8	82.1								
ph/frq (deg)	35.2	28.4								
amp/frq (%)	38.6	49.5								
Amplitude										
Search (1024X32)										
Interp.										
Inc. seg. avg.										
Inc. frq. avg.										
PCal mode: MANUAL, MANUAL										
PC period (AP's) 5, 5										
sb window (us)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
0.178 +/- 0.031										
0.152										
0.000										
0.180										
0.181										
6.75229E-03										
9.76564E-01										
1.04861E-06										
-6.31879E-06										
32.5										
+/- 1.9E-04										
+/- 1.5E-03										
+/- 6.5E-07										
+/- 6.2E-09										
+/- 20.1										
simultaneous interpolator										

k: az 66.0 el 40.1 pa -76.8 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -10874.625 -3023.149 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/kX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/kX.W.213.1273D9

Mk4/DiFX fourfit 3.20 rev 0

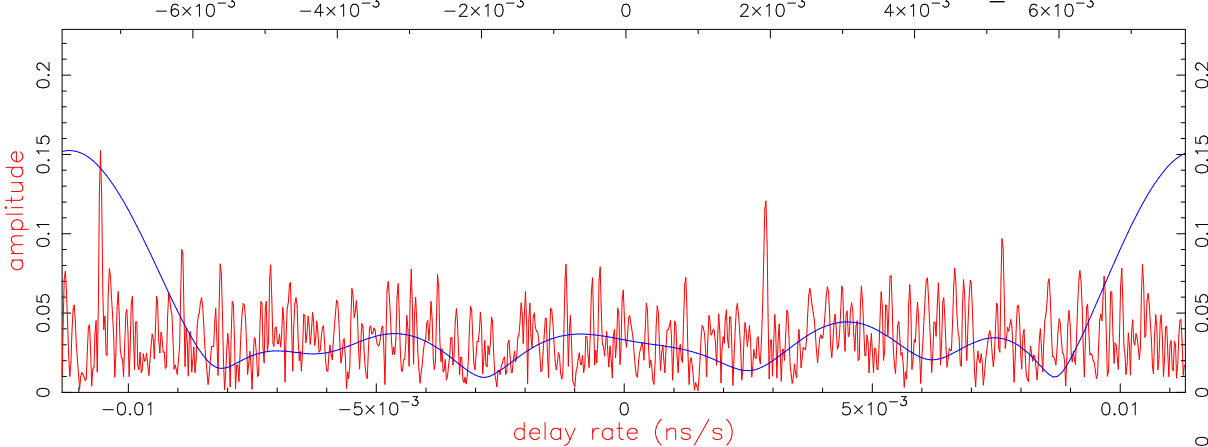
frontend

2013+370.1273D9, No0056, kX

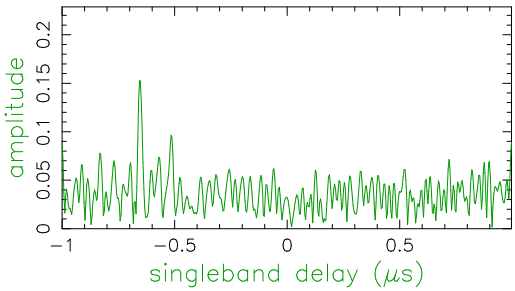
VLBA\_KP - ONSALA60, fgroup W, pol RL

multiband delay ( $\mu$ s)

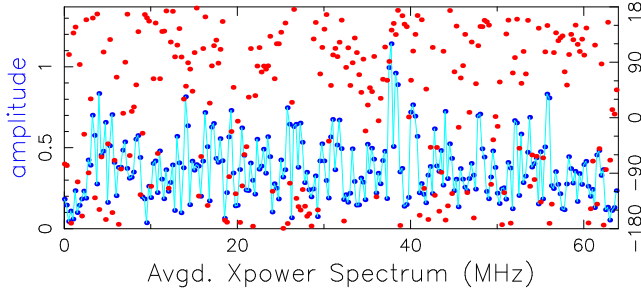
Fringe quality 0



SNR 5.7  
Int time 179.155  
Amp 0.229  
Phase -108.0  
PFD 8.1e-01  
Delays (us)  
SBD -0.654283  
MBD -0.007647  
Fringe rate (Hz)  
-0.911630  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512

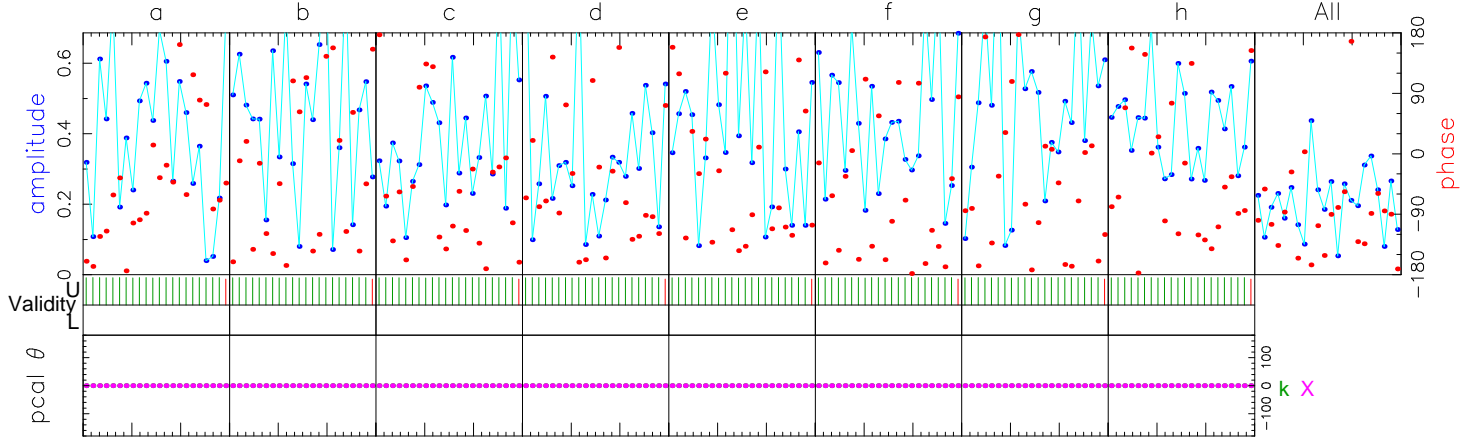


delay rate (ns/s)



Exp. c192c  
Exper # 16383  
Yr:day 2019:278  
Start 224000.00  
Stop 224300.23  
FRT 224130.00  
Corr/FF/build  
2020:070:045745  
2020:071:130356  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
k	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
k:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
k:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
k	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
k	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		Chan ids
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		Tracks
Group delay (usec)(sbd)	-1.29193644360E+03	-1.29194245434E+03	-1.29128817507E+03	-1.29128817159E+03	-1.29128817159E+03	-1.29128817159E+03	-1.29128817159E+03	-1.29128817159E+03		
Sband delay (usec)	-1.29194245434E+03	-1.29194245434E+03	-1.29128817507E+03	-1.29128817159E+03	-1.29128817159E+03	-1.29128817159E+03	-1.29128817159E+03	-1.29128817159E+03		
Phase delay (usec)	-1.29128817507E+03	-1.29128817507E+03	-1.29128817507E+03	-1.29128817507E+03	-1.29128817507E+03	-1.29128817507E+03	-1.29128817507E+03	-1.29128817507E+03		
Delay rate (us/s)	1.50933275611E+00	1.50933275611E+00	1.50933275611E+00	1.50933275611E+00	1.50933275611E+00	1.50933275611E+00	1.50933275611E+00	1.50933275611E+00		
Total phase (deg)			-144.3							
Apriori delay (usec)				0.151	0.151	0.151	0.151	0.151		
Apriori clock (usec)				0.151	0.151	0.151	0.151	0.151		
Apriori clockrate (us/s)				0.000E+00	0.000E+00	0.000E+00	0.000E+00	0.000E+00		
Apriori rate (us/s)				1.50933275611E+00	1.50933275611E+00	1.50933275611E+00	1.50933275611E+00	1.50933275611E+00		
Apriori accel (us/s/s)				-1.46992974816E-05	-1.46992974816E-05	-1.46992974816E-05	-1.46992974816E-05	-1.46992974816E-05		
Resid mbdelay (usec)				-7.64701E-03	-7.64701E-03	-7.64701E-03	-7.64701E-03	-7.64701E-03		+/- 1.9E-04
Resid sbdelay (usec)				-6.54283E-01	-6.54283E-01	-6.54283E-01	-6.54283E-01	-6.54283E-01		+/- 1.5E-03
Resid phdelay (usec)				-3.48403E-06	-3.48403E-06	-3.48403E-06	-3.48403E-06	-3.48403E-06		+/- 6.5E-07
Resid rate (us/s)				-1.05831E-05	-1.05831E-05	-1.05831E-05	-1.05831E-05	-1.05831E-05		+/- 6.3E-09
Resid phase (deg)				-108.0	-108.0	-108.0	-108.0	-108.0		+/- 20.2
Pcal mode: MANUAL, MANUAL										
Pcal rate: 0.000E+00, 0.000E+00 (us/s)										
Bits/sample: 2x2										
Sample rate(MISamp/s): 128										
Data rate(Mb/s): 2048										
PC period (AP's) 5, 5										
sb window (us)										-1.000 1.000
SampCntNorm: enabled										-0.008 0.008
mb window (us)										-0.011 0.011
dr window (ns/s)										0.00 0.00
ion window (TEC)										0.00 0.00
nlags: 256										
t_cohere infinite										
simultaneous interpolator										

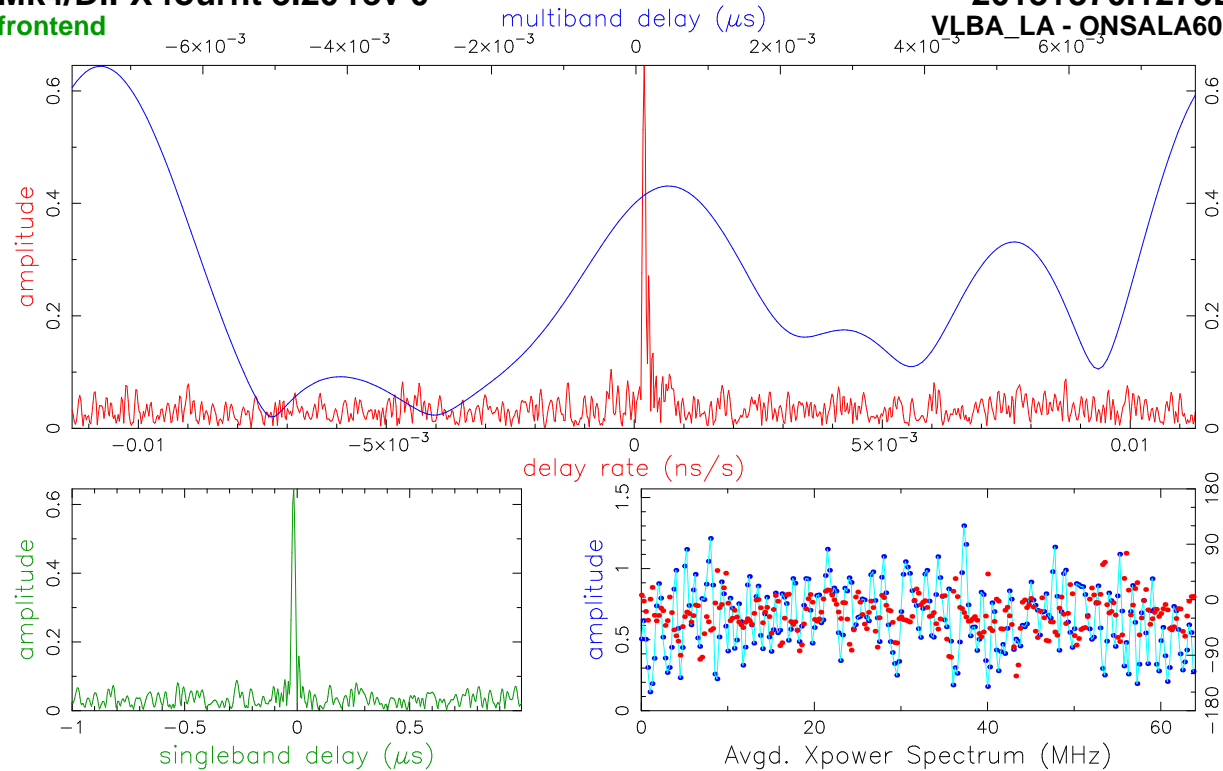
k: az 66.0 el 40.1 pa -76.8 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -10874.625 -3023.149 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/kX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/kX.W.230.1273D9

Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.1273D9, No0056, IX

VLBA\_LA - ONSALA60, fgroup W, pol LL

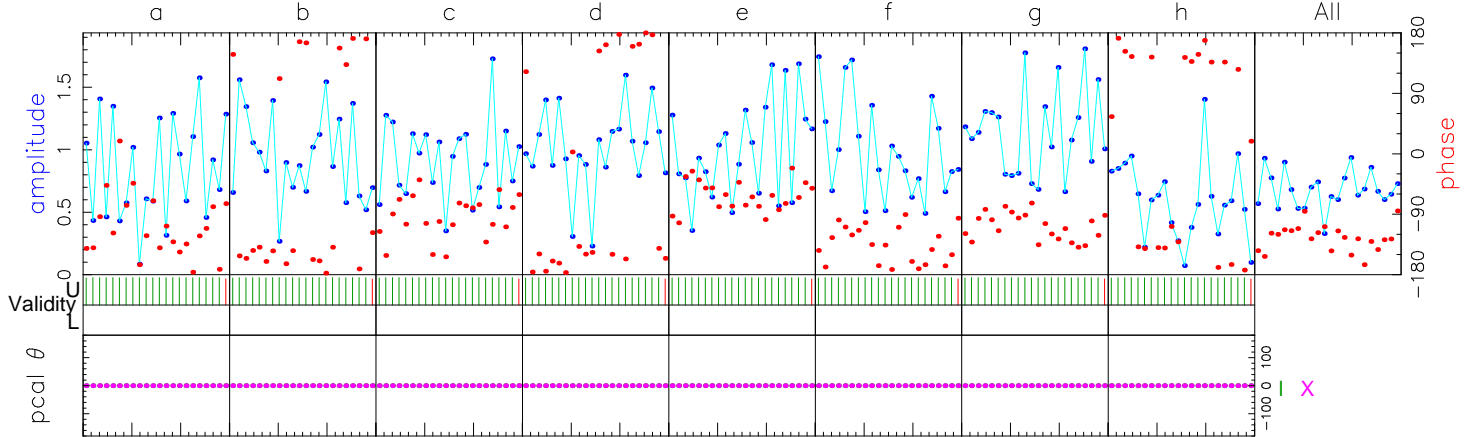


Fringe quality 8

SNR 23.6  
 Int time 179.380  
 Amp 0.645  
 Phase -126.5  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.016236  
 MBD -0.007434  
 Fringe rate (Hz)  
 0.016718  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130356  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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

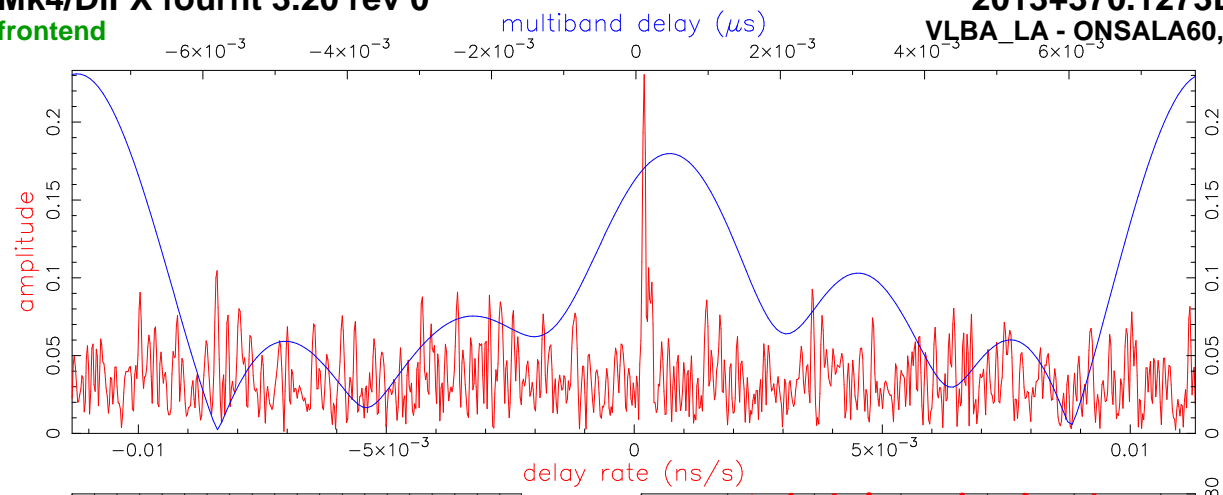


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-114.0	-166.8	-94.1	-172.0	-64.9	-133.4	-110.2	166.4	Phase	-126.5
	0.7	0.9	0.8	0.9	0.9	1.1	0.9	0.4	Ampl.	0.8
	252.3	252.4	252.7	252.7	252.5	252.1	252.5	250.4	Sbd box	252.8
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
I	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
I:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
I:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	ManI PC	
I	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
X	1000	1000	1000	1000	1000	1000	1000	1000		
I	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

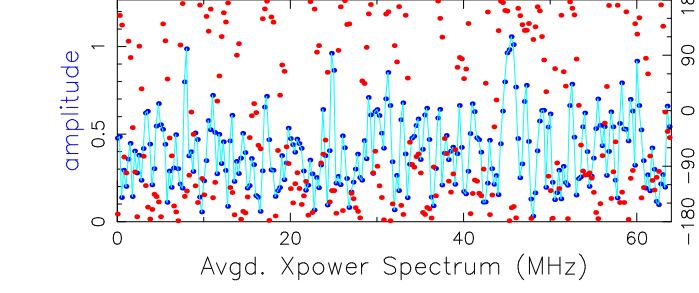
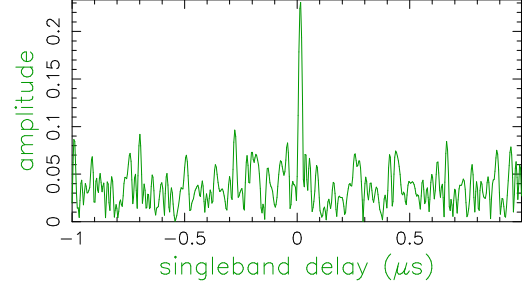
Group delay (usec)(sbd) 2.10692954883E+02 Apriori delay (usec) 2.10716014311E+02 Resid mbdelay (usec) -7.43443E-03 +/- 4.6E-05  
 Sband delay (usec) 2.10699778311E+02 Apriori clock (usec) -3.3178566E+01 Resid sbdelay (usec) -1.62360E-02 +/- 3.6E-04  
 Phase delay (usec) 2.10716010232E+02 Apriori clockrate (us/s) -8.7947201E-07 Resid phdelay (usec) -4.07939E-06 +/- 1.6E-07  
 Delay rate (us/s) 1.42000668192E+00 Apriori rate (us/s) 1.42000648783E+00 Resid rate (us/s) 1.94082E-07 +/- 1.5E-09  
 Total phase (deg) 43.7 Apriori accel (us/s/s) -1.89112546431E-05 Resid phase (deg) -126.5 +/- 4.8

RMS Theor. Amplitude 0.645 +/- 0.027 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 ph/seg (deg) 19.3 11.4 Search (1024X32) 0.632 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 amp/seg (%) 23.1 19.8 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 ph/frq (deg) 47.5 6.9 Inc. seg. avg. 0.668 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 amp/frq (%) 39.4 12.0 Inc. frq. avg. 0.816 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00

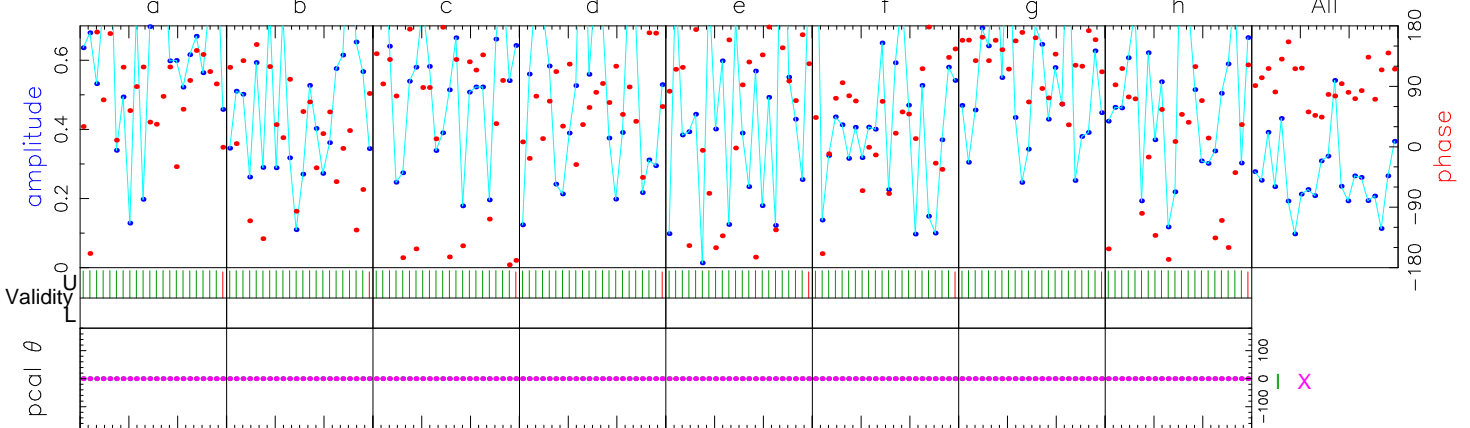
I: az 70.7 el 45.7 pa -74.3 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -10234.312 -2888.396 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/IX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/IX.W.234.1273D9



Fringe quality 9  
SNR 8.5  
Int time 179.380  
Amp 0.233  
Phase 94.8  
PFD 2.4e-09  
Delays (us)  
SBD 0.014273  
MBD -0.007817  
Fringe rate (Hz) 0.016992  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:278  
Start 224000.00  
Stop 224300.23  
FRT 224130.00  
Corr/FF/build  
2020:070:045745  
2020:071:130359  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"



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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
I	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
I:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
I:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
I	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
I	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)	2.10723821821E+02		Apriori delay (usec)		2.10716014311E+02		Resid mbdelay (usec)		-7.81749E-03	+/- 1.3E-04
Sband delay (usec)	2.10730287311E+02		Apriori clock (usec)		-3.3178566E+01		Resid sbdelay (usec)		1.42730E-02	+/- 1.0E-03
Phase delay (usec)	2.10716017370E+02		Apriori clockrate (us/s)		-8.7947201E-07		Resid phdelay (usec)		3.05833E-06	+/- 4.3E-07
Delay rate (us/s)	1.42000668510E+00		Apriori rate (us/s)		1.42000648783E+00		Resid rate (us/s)		1.97262E-07	+/- 4.2E-09
Total phase (deg)	265.0		Apriori accel (us/s/s)		-1.89112546431E-05		Resid phase (deg)		94.8	+/- 13.4

ph/seg (deg) 30.0 31.5 Search (1024X32) 0.229 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 44.3 54.9 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 47.3 19.0 Inc. seg. avg. 0.229 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 48.8 33.1 Inc. frq. avg. 0.275 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
I: az 70.7 el 45.7 pa -74.3 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -10234.312 -2888.396 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/IX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/IX.W.242.1273D9

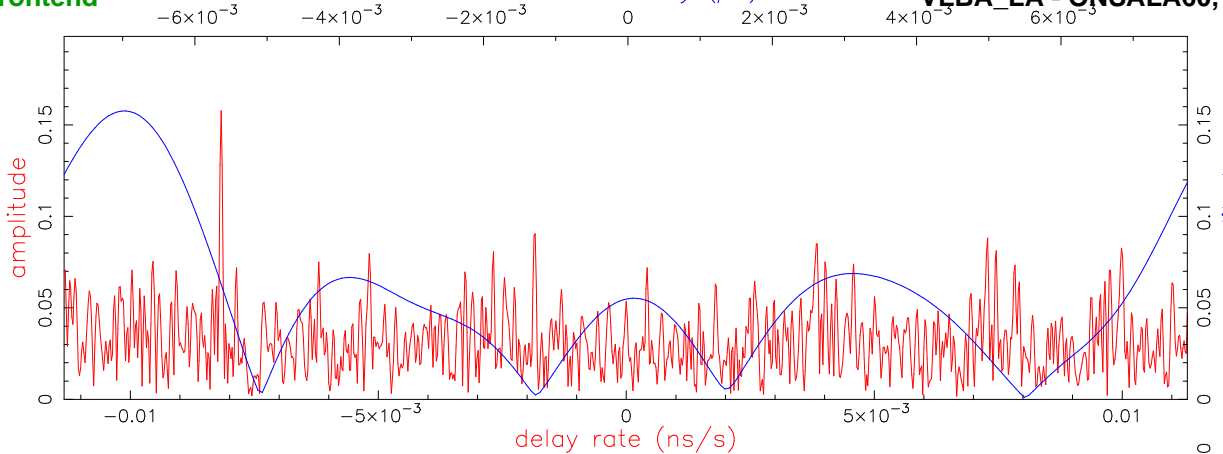
Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.1273D9, No0056, IX

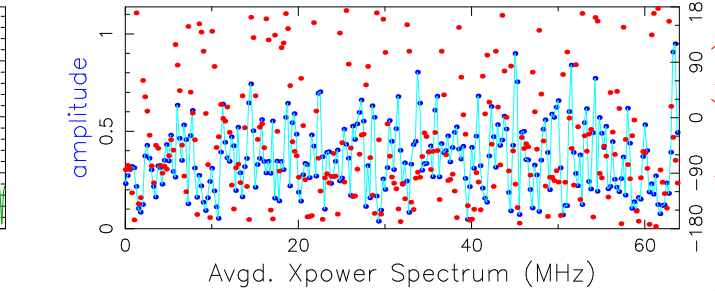
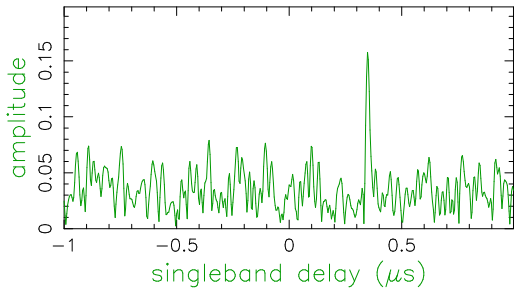
VLBA\_LA - ONSALA60, fgroup W, pol LR

multiband delay ( $\mu$ s)



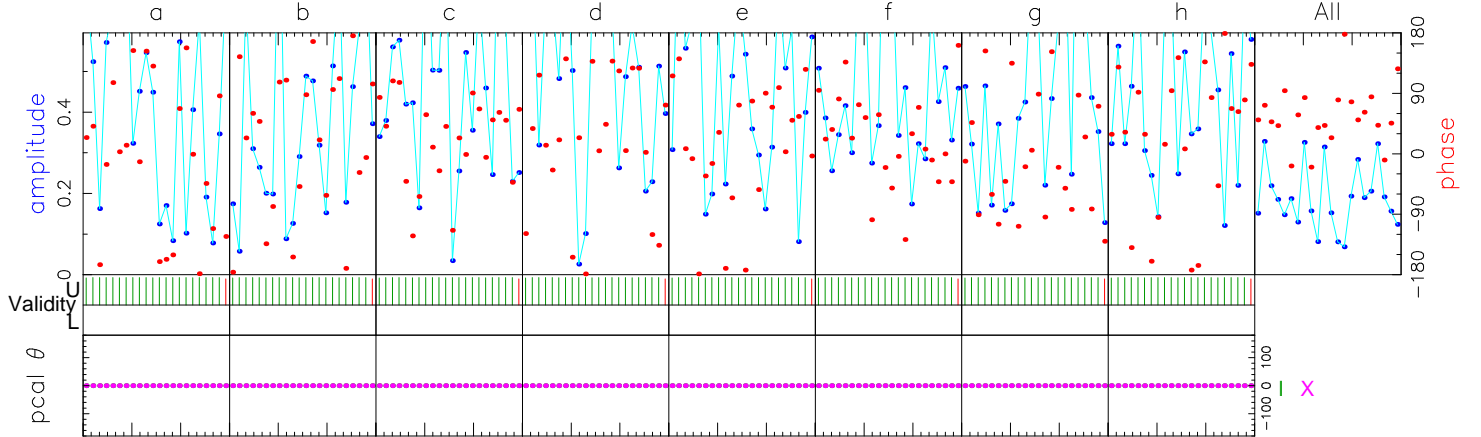
Fringe quality 0

SNR 5.8  
 Int time 179.380  
 Amp 0.198  
 Phase 53.0  
 PFD 5.5e-01  
 Delays (us)  
 SBD 0.348657  
 MBD -0.006952  
 Fringe rate (Hz)  
 -0.704678  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Yr:day 16383  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130401  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
I	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
I:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
I:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
I	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
I	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)		2.11068437584E+02				2.10716014311E+02			Resid mbdelay (usec)	-6.95173E-03 +/- 1.9E-04
Sband delay (usec)		2.11064670811E+02				-3.3178566E+01			Resid sbdelay (usec)	3.48657E-01 +/- 1.5E-03
Phase delay (usec)		2.10716016021E+02				-8.7947201E-07			Resid phdelay (usec)	1.71010E-06 +/- 6.4E-07
Delay rate (us/s)		1.41999830722E+00				1.42000648783E+00			Resid rate (us/s)	-8.18061E-06 +/- 6.1E-09
Total phase (deg)			223.2			-1.89112546431E-05			Resid phase (deg)	53.0 +/- 19.7
	RMS	Theor.	Amplitude	0.198 +/- 0.034					PCal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
ph/seg (deg)	43.7	46.3	Search (1024X32)	0.151					PCal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
amp/seg (%)	53.2	80.8	Interp.	0.000					Bits/sample: 2x2	SampCntNorm: enabled mb window (us) -0.008 0.008
ph/frq (deg)	34.6	27.9	Inc. seg. avg.	0.180					Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
amp/frq (%)	43.2	48.7	Inc. frq. avg.	0.201					Data rate(Mb/s): 2048	nlags: 256 t_cohere infinite ion window (TEC) 0.00 0.00

I: az 70.7 el 45.7 pa -74.3 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -10234.312 -2888.396 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/IX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/IX.W.262.1273D9

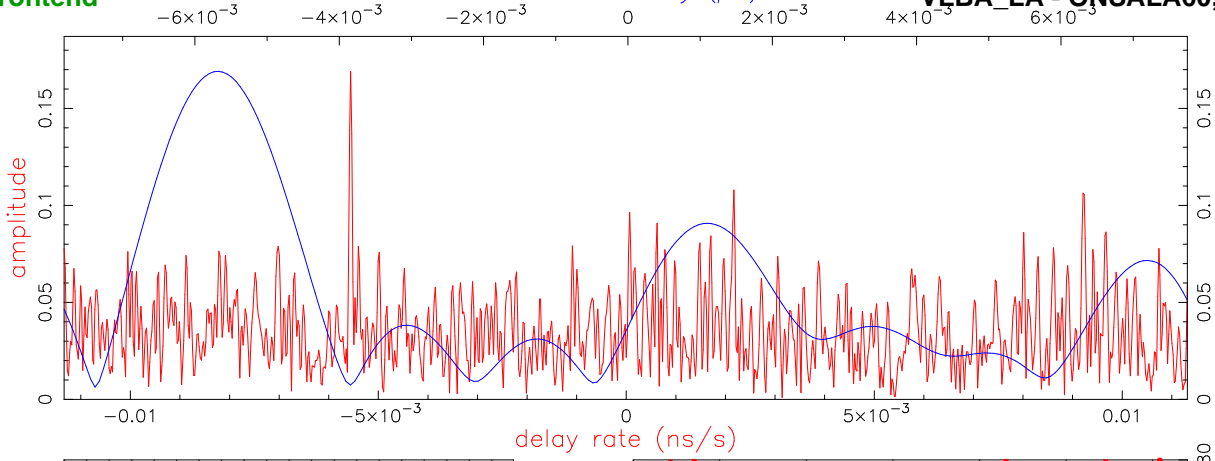
Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.1273D9, No0056, IX

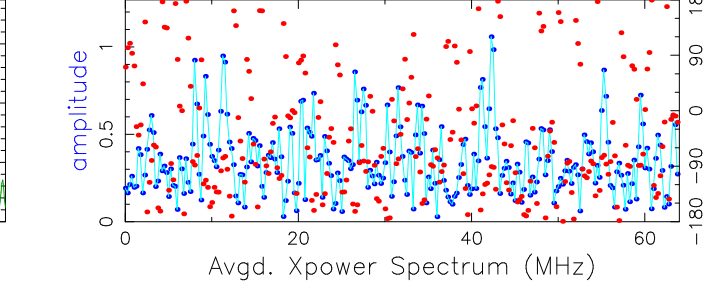
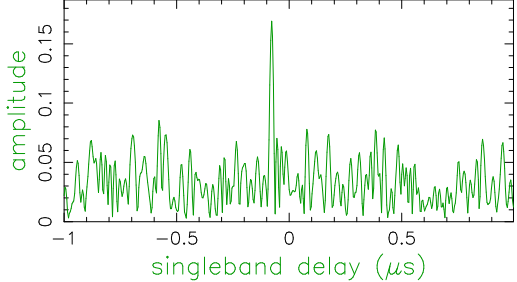
VLBA\_LA - ONSALA60, fgroup W, pol RL

multiband delay ( $\mu$ s)



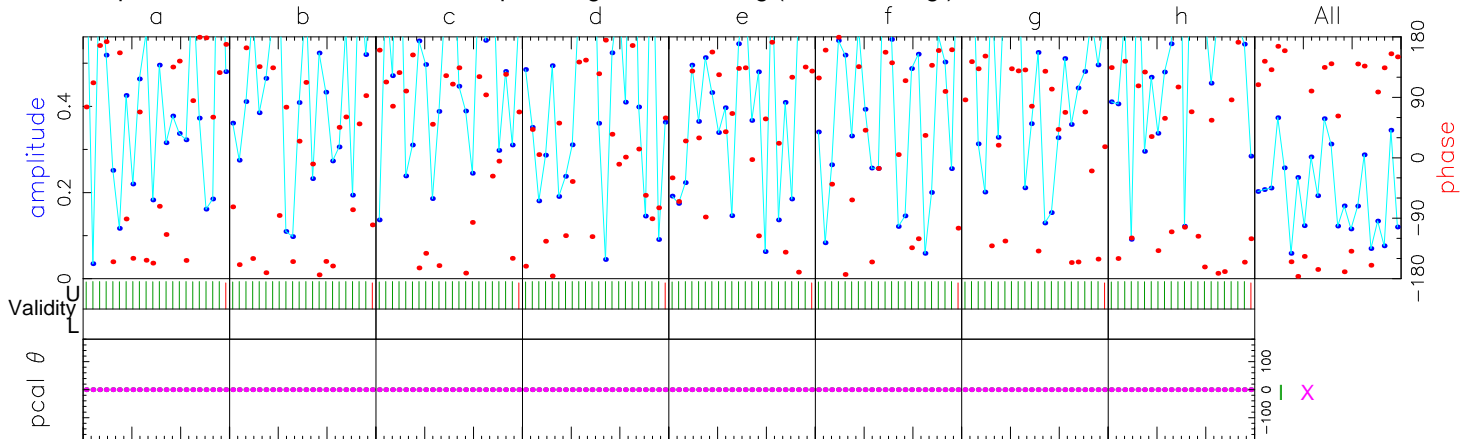
Fringe quality 0

SNR 6.2  
Int time 179.380  
Amp 0.187  
Phase 148.8  
PFD 7.4e-02  
Delays (us)  
SBD -0.077828  
MBD -0.005669  
Fringe rate (Hz)  
-0.478573  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512



Exp. c192c  
Exper # 16383  
Yr:day 2019:278  
Start 224000.00  
Stop 224300.23  
FRT 224130.00  
Corr/FF/build  
2020:070:045745  
2020:071:130404  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

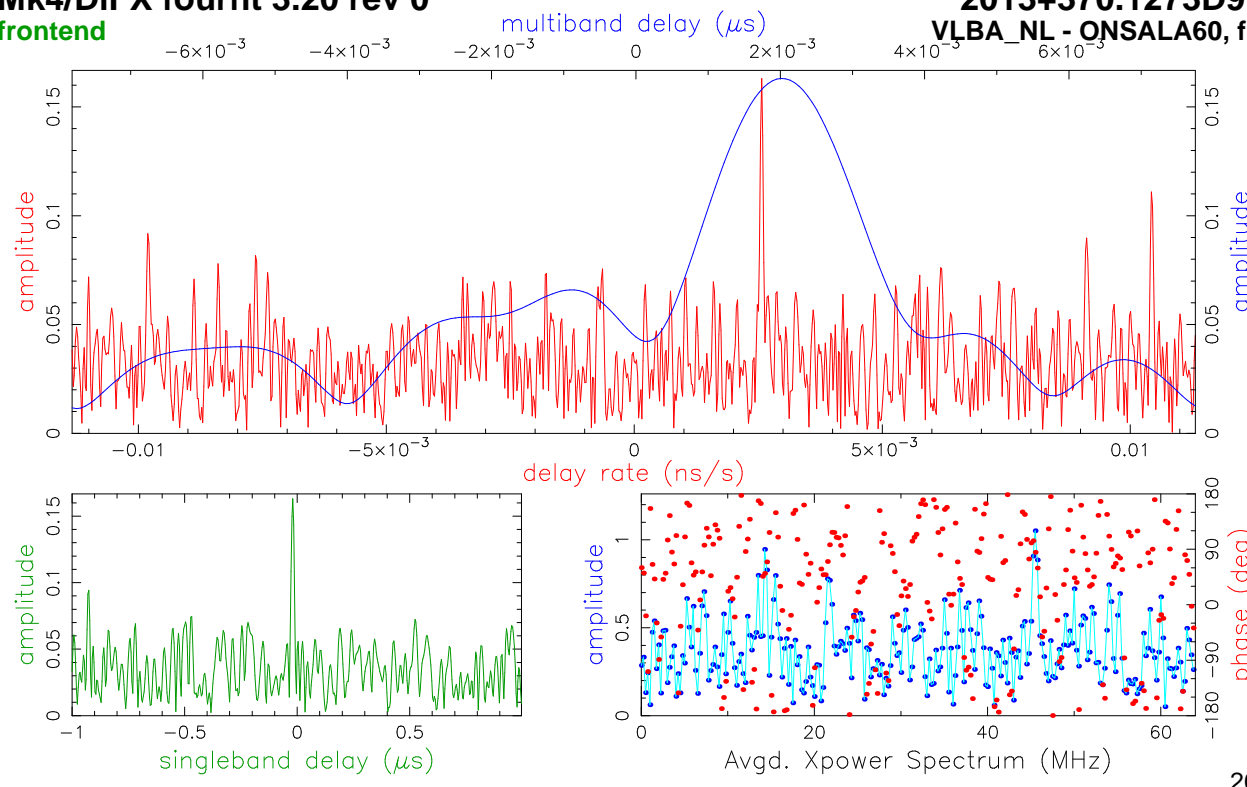
Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
I	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
I:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
I:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
I	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
I	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)		2.10632220755E+02				2.10716014311E+02			Resid mbdelay (usec)	-5.66856E-03 +/- 1.8E-04
Sband delay (usec)		2.10638186561E+02				-3.3178566E+01			Resid sbdelay (usec)	-7.78278E-02 +/- 1.4E-03
Phase delay (usec)		2.10716019110E+02				-8.7947201E-07			Resid phdelay (usec)	4.79867E-06 +/- 6.0E-07
Delay rate (us/s)		1.42000093208E+00				1.42000648783E+00			Resid rate (us/s)	-5.55575E-06 +/- 5.7E-09
Total phase (deg)			319.0			-1.89112546431E-05			Resid phase (deg)	148.8 +/- 18.5
RMS	40.4	43.4			0.187 +/- 0.030				Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
ph/seg (deg)	40.4	43.4			0.165				Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
amp/seg (%)	59.0	75.7			0.000				Bits/sample: 2x2	SampCntNorm: enabled mb window (us) -0.008 0.008
ph/frq (deg)	29.1	26.2			0.173				Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
amp/frq (%)	39.0	45.6			0.179				Data rate(Mb/s): 2048	nlags: 256 t_cohere infinite ion window (TEC) 0.00 0.00

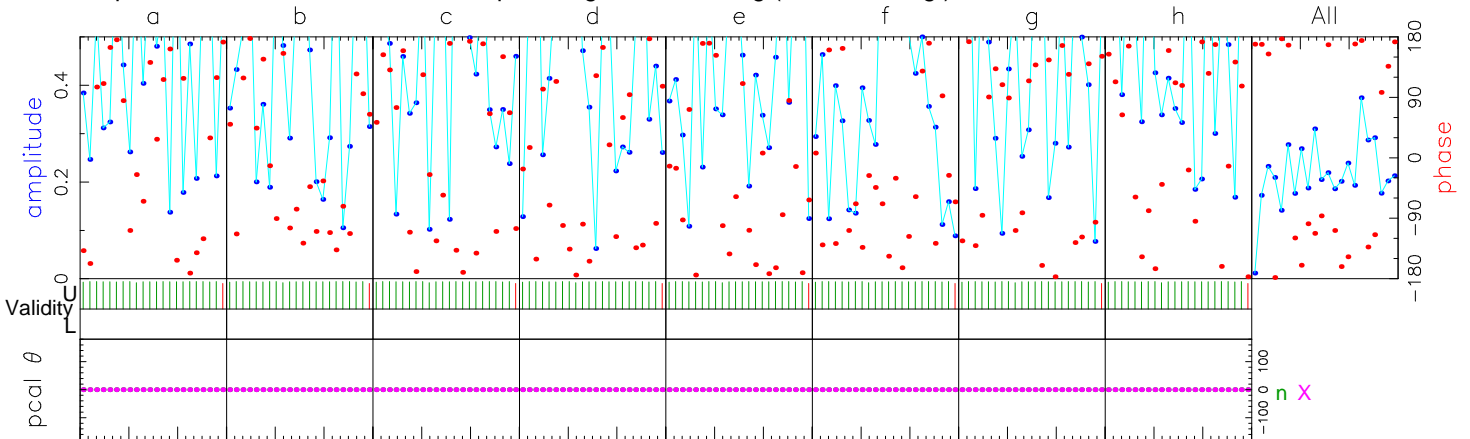
I: az 70.7 el 45.7 pa -74.3 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -10234.312 -2888.396 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/IX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/IX.W.279.1273D9





Fringe quality 0  
SNR 6.0  
Int time 178.367  
Amp 0.167  
Phase -161.9  
PFD 2.7e-01  
Delays (us)  
SBD -0.019891  
MBD 0.002011  
Fringe rate (Hz) 0.222331  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512  
Exp. c192c  
Exper # 16383  
Yr:day 2019:278  
Start 224000.00  
Stop 224300.23  
FRT 224130.00  
Corr/FF/build  
2020:070:045745  
2020:071:130400  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

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



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

Group delay (usec)(sbd) 3.06725865793E+03 Apriori delay (usec) 3.06727227153E+03 Resid mbdelay (usec) 2.01140E-03 +/- 1.8E-04  
Sband delay (usec) 3.06725238078E+03 Apriori clock (usec) -5.8738213E-07 Resid sbdelay (usec) -1.98907E-02 +/- 1.4E-03  
Phase delay (usec) 3.06727226631E+03 Apriori clockrate (us/s) -3.9377651E-07 Resid phdelay (usec) -5.22092E-06 +/- 6.2E-07  
Delay rate (us/s) 1.19642939109E+00 Apriori rate (us/s) 1.19642681005E+00 Resid rate (us/s) 2.58104E-06 +/- 6.0E-09  
Total phase (deg) 7.2 Apriori accel (us/s/s) -2.83974848744E-05 Resid phase (deg) -161.9 +/- 19.2

ph/seg (deg) 43.9 45.1 Amplitude 0.167 +/- 0.028 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 54.1 78.7 Search (1024X32) 0.155 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 33.4 27.2 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 27.6 47.4 Inc. seg. avg. 0.170 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
n: az 84.2 el 58.1 pa -68.7 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -8631.797 -2890.340 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/nX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/nX.W.248.1273D9 simultaneous interpolator

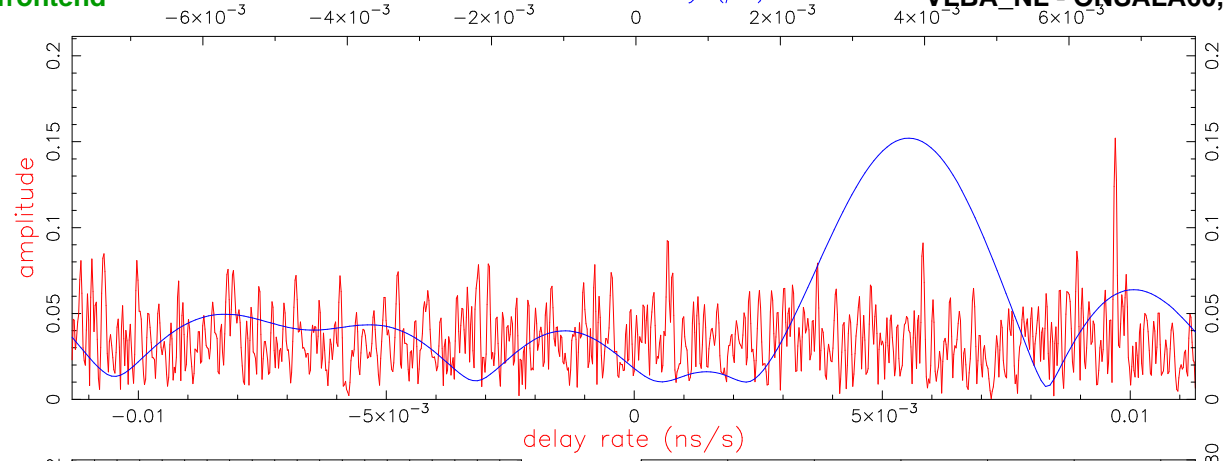
Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.1273D9, No0056, nX

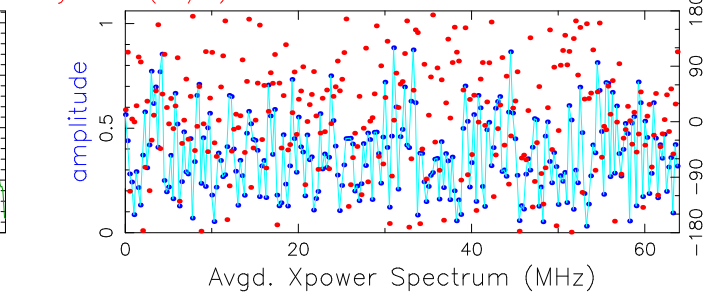
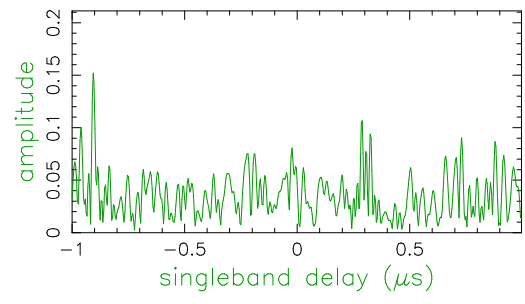
VLBA\_NL - ONSALA60, fgroup W, pol RR

multiband delay ( $\mu$ s)



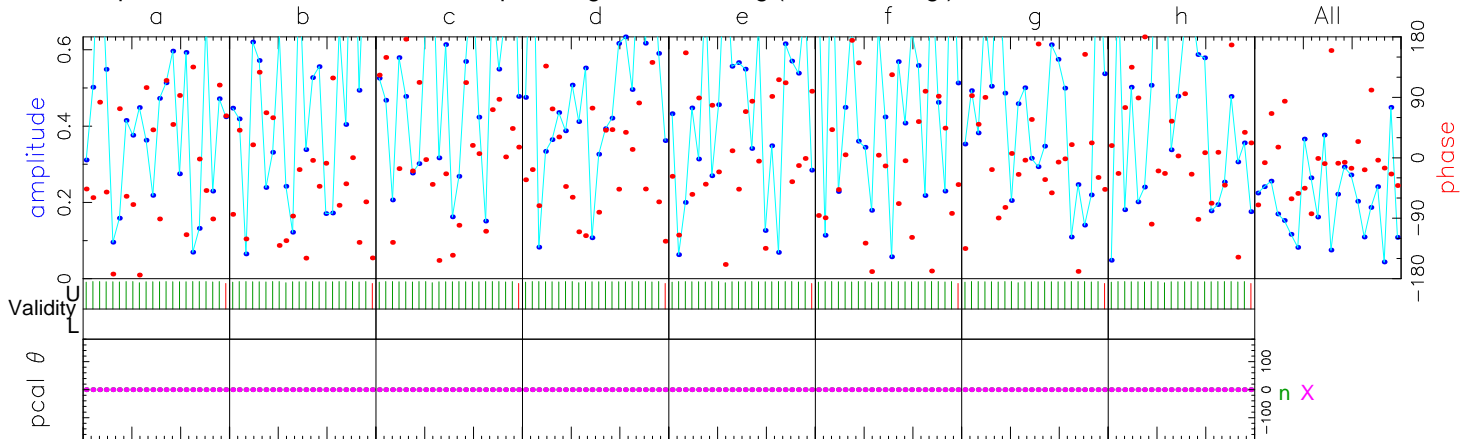
Fringe quality 0

SNR 5.6  
 Int time 178.367  
 Amp 0.211  
 Phase -12.2  
 PFD 9.4e-01  
 Delays (us)  
 SBD -0.905383  
 MBD 0.003819  
 Fringe rate (Hz)  
 0.837523  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130402  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	2.8	-46.2	27.8	-14.0	4.3	-47.8	-19.7	-10.2	Phase	-12.2
	0.1	0.3	0.3	0.3	0.2	0.1	0.3	0.3	Ampl.	0.2
	29.7	335.9	4.9	26.4	63.7	44.3	232.0	482.6	Sbd box	25.2
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
n:X	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	
X	1000	1000	1000	1000	1000	1000	1000	1000		
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	3.06636984073E+03		Apriori delay (usec)		3.06727227153E+03		Resid mbdelay (usec)		3.81920E-03	+/- 1.9E-04
Sband delay (usec)	3.06636688853E+03		Apriori clock (usec)		-5.8738213E-07		Resid sbdelay (usec)		-9.05383E-01	+/- 1.5E-03
Phase delay (usec)	3.06727227114E+03		Apriori clockrate (us/s)		-3.9377651E-07		Resid phdelay (usec)		-3.92953E-07	+/- 6.6E-07
Delay rate (us/s)	1.19643653286E+00		Apriori rate (us/s)		1.19642681005E+00		Resid rate (us/s)		9.72281E-06	+/- 6.4E-09
Total phase (deg)	156.9		Apriori accel (us/s/s)		-2.83974848744E-05		Resid phase (deg)		-12.2	+/- 20.5

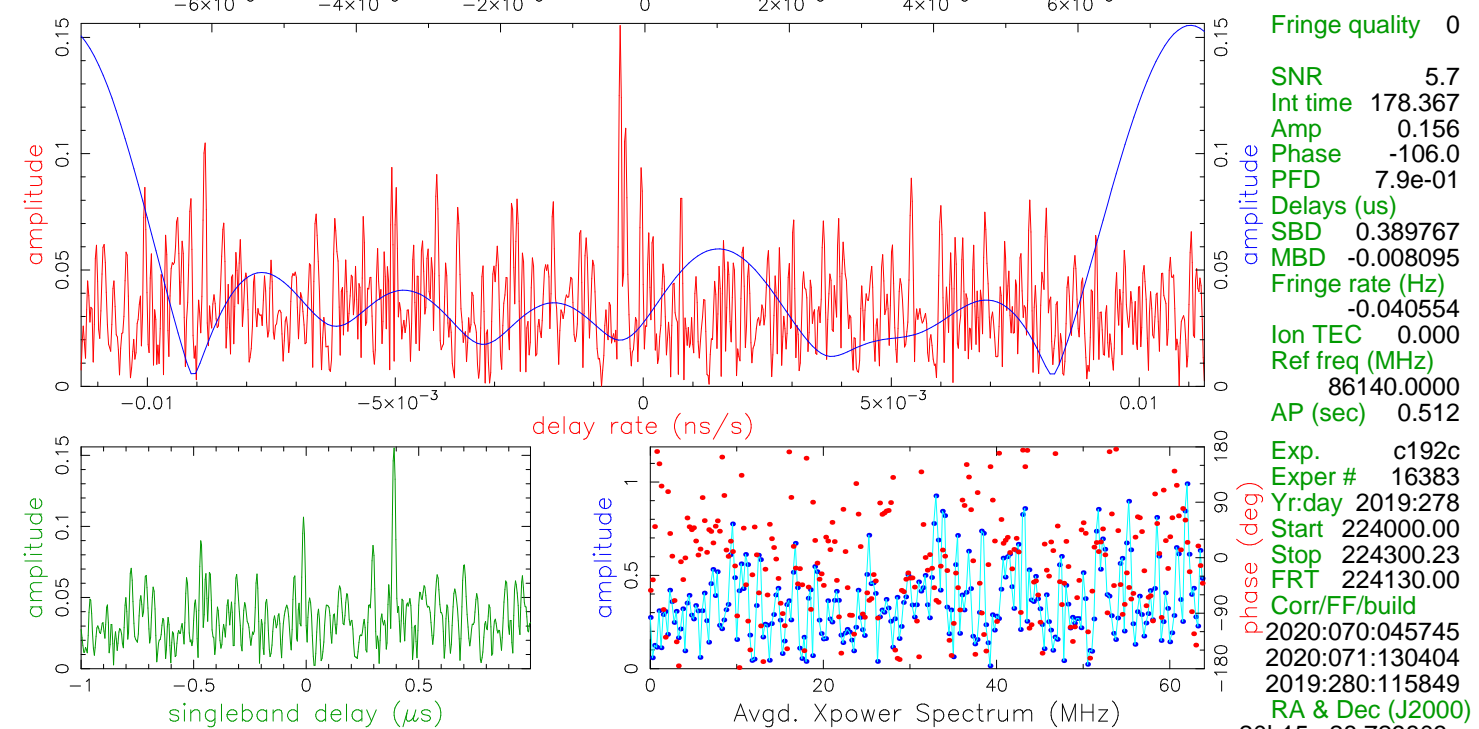
ph/seg (deg) 58.3 48.1 Search (1024X32) 0.150 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 76.2 84.0 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 27.6 29.0 Inc. seg. avg. 0.215 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 34.1 50.6 Inc. frq. avg. 0.203 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 84.2 el 58.1 pa -68.7 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -8631.797 -2890.340 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/nX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/nX.W.266.1273D9

Mk4/DiFX fourfit 3.20 rev 0

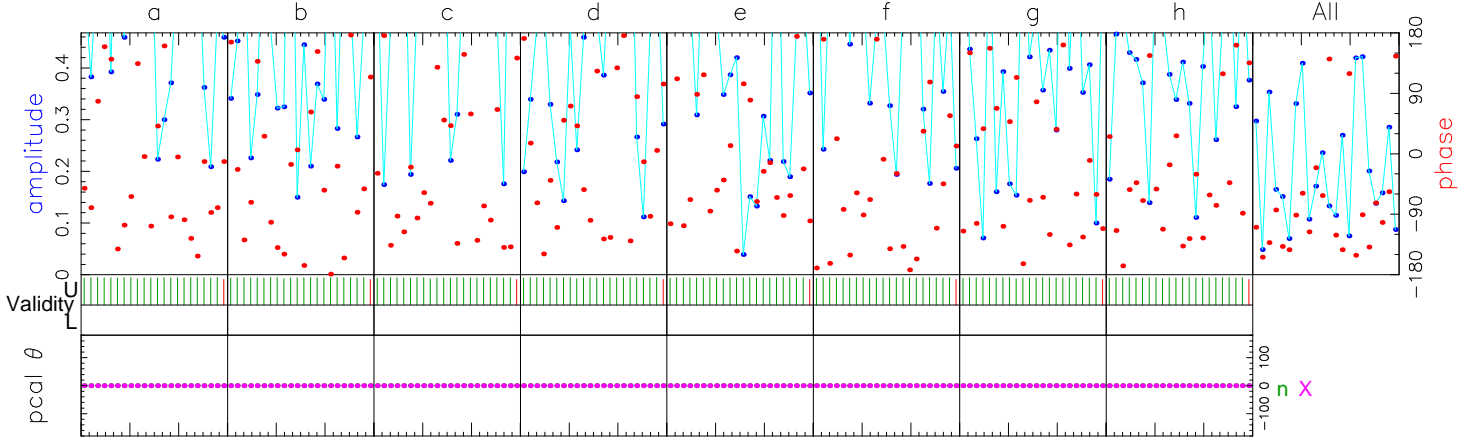
frontend

2013+370.1273D9, No0056, nX

VLBA\_NL - ONSALA60, fgroup W, pol LR



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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-103.4	-122.0	-101.3	-126.5	-75.2	-121.9	-131.3	-85.3	Phase	-106.0
	0.2	0.1	0.2	0.1	0.2	0.2	0.2	0.2	Ampl.	0.1
	497.7	136.1	329.8	334.0	178.1	450.4	502.7	365.2	Sbd box	356.8
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
n:X	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	
X	1000	1000	1000	1000	1000	1000	1000	1000		
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	3.06765480156E+03		Apriori delay (usec)		3.06727227153E+03		Resid mbdelay (usec)		-8.09497E-03	+/- 1.9E-04
Sband delay (usec)	3.06766203828E+03		Apriori clock (usec)		-5.8738213E-07		Resid sbdelay (usec)		3.89767E-01	+/- 1.5E-03
Phase delay (usec)	3.06727226811E+03		Apriori clockrate (us/s)		-3.9377651E-07		Resid phdelay (usec)		-3.41865E-06	+/- 6.5E-07
Delay rate (us/s)	1.19642633926E+00		Apriori rate (us/s)		1.19642681005E+00		Resid rate (us/s)		-4.70791E-07	+/- 6.2E-09
Total phase (deg)	63.1		Apriori accel (us/s/s)		-2.83974848744E-05		Resid phase (deg)		-106.0	+/- 20.1

	RMS	Theor.	Amplitude	0.156 +/- 0.027	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000
ph/seg (deg)	55.7	47.2	Search (1024X32)	0.150	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		mb window (us)	-0.008	0.008
amp/seg (%)	83.1	82.4	Interp.	0.000	Bits/sample: 2x2	SampCntNorm: enabled	dr window (ns/s)	-0.011	0.011
ph/frq (deg)	22.3	28.5	Inc. seg. avg.	0.158	Sample rate(MISamp/s): 128		ion window (TEC)	0.00	0.00
amp/frq (%)	22.7	49.7	Inc. frq. avg.	0.146	Data rate(Mb/s): 2048	nlags: 256 t_cohere infinite			
n: az 84.2 el 58.1 pa -68.7	X: az 271.1 el 45.2 pa 42.5		u, v (fr/asec) -8631.797 -2890.340				simultaneous interpolator		

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/nX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/nX.W.283.1273D9

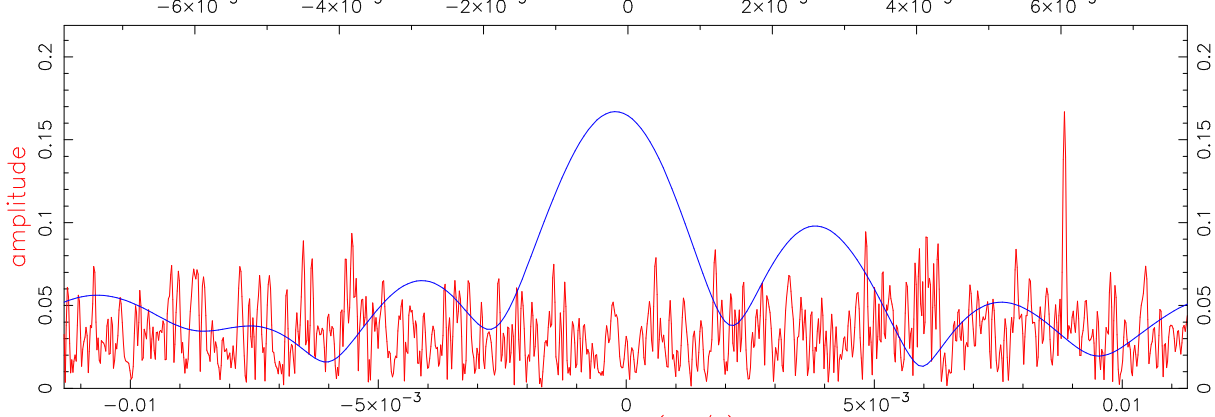
Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.1273D9, No0056, nX

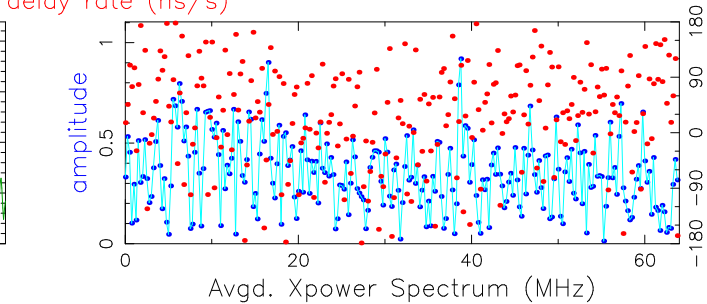
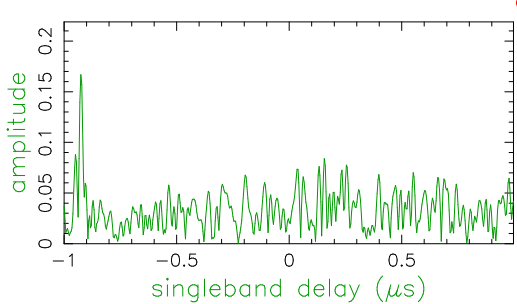
VLBA\_NL - ONSALA60, fgroup W, pol RL

multiband delay ( $\mu$ s)



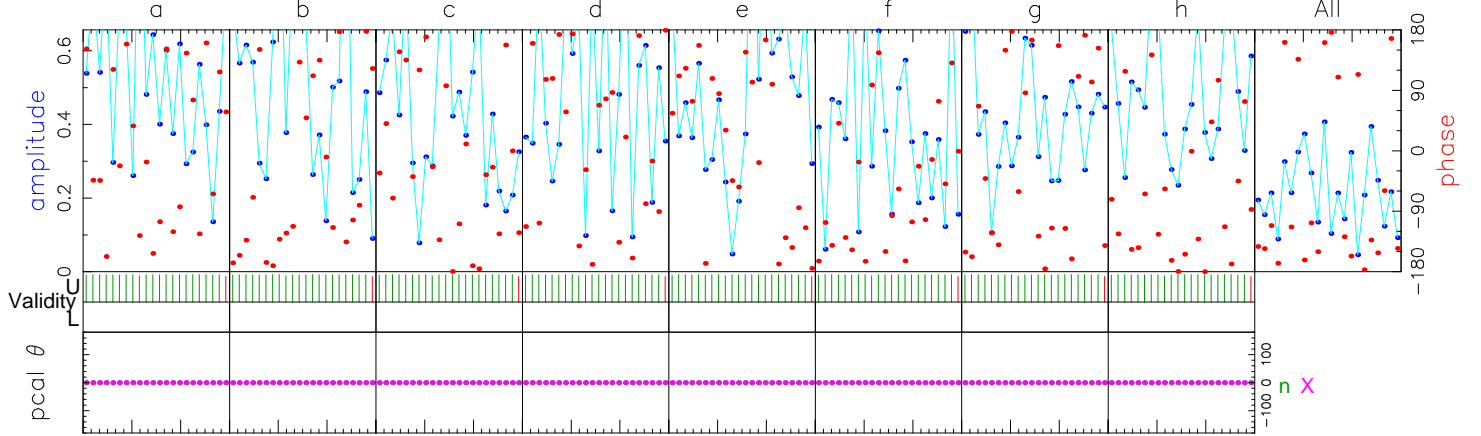
Fringe quality 0

SNR 6.1  
Int time 178.367  
Amp 0.219  
Phase -162.3  
PFD 1.1e-01  
Delays (us)  
SBD -0.924826  
MBD -0.000136  
Fringe rate (Hz) 0.763100  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512



Exp. c192c  
Exper # 16383  
Yr:day 2019:278  
Start 224000.00  
Stop 224300.23  
FRT 224130.00  
Corr/FF/build  
2020:070:045745  
2020:071:130407  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

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

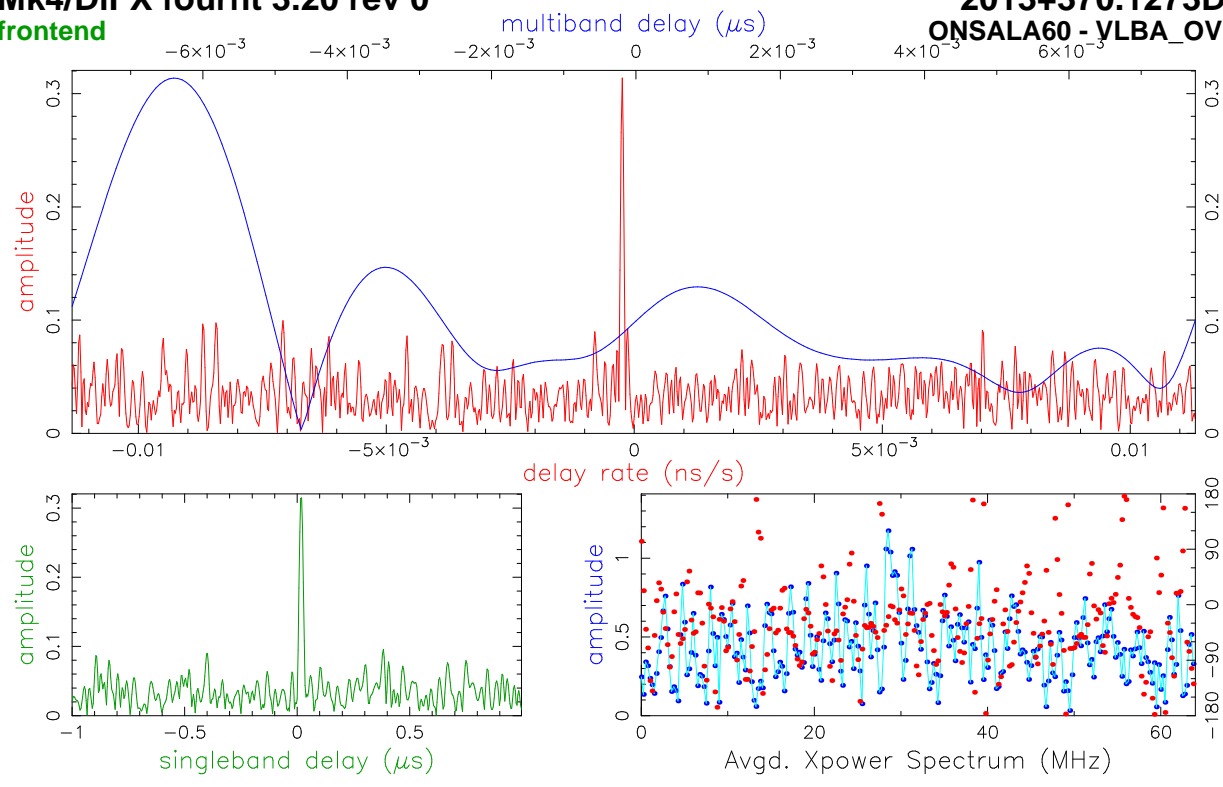


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-139.9	-151.8	-159.7	-179.2	145.8	-158.0	-176.9	-131.7	Phase	-162.3
	0.2	0.4	0.1	0.1	0.3	0.2	0.3	0.3	Ampl.	0.2
	123.4	20.6	424.5	446.2	165.2	120.3	21.3	511.6	Sbd box	20.2
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
n:X	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	
X	1000	1000	1000	1000	1000	1000	1000	1000		
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd) 3.06635026083E+03 Apriori delay (usec) 3.06727227153E+03 Resid mbdelay (usec) -1.35703E-04 +/- 1.8E-04  
 Sband delay (usec) 3.06634744553E+03 Apriori clock (usec) -5.8738213E+00 Resid sbdelay (usec) -9.24826E-01 +/- 1.4E-03  
 Phase delay (usec) 3.06727226630E+03 Apriori clockrate (us/s) -3.9377651E-07 Resid phdelay (usec) -5.23498E-06 +/- 6.0E-07  
 Delay rate (us/s) 1.19643566888E+00 Apriori rate (us/s) 1.19642681005E+00 Resid rate (us/s) 8.85883E-06 +/- 5.8E-09  
 Total phase (deg) 6.7 Apriori accel (us/s/s) -2.83974848744E-05 Resid phase (deg) -162.3 +/- 18.7

ph/seg (deg) 45.2 43.8 Amplitude 0.219 +/- 0.036 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 67.2 76.4 Search (1024X32) 0.165 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 28.2 26.4 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 46.5 46.1 Inc. seg. avg. 0.220 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 Inc. frq. avg. 0.217 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00

n: az 84.2 el 58.1 pa -68.7 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) -8631.797 -2890.340 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/nX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/nX.W.303.1273D9

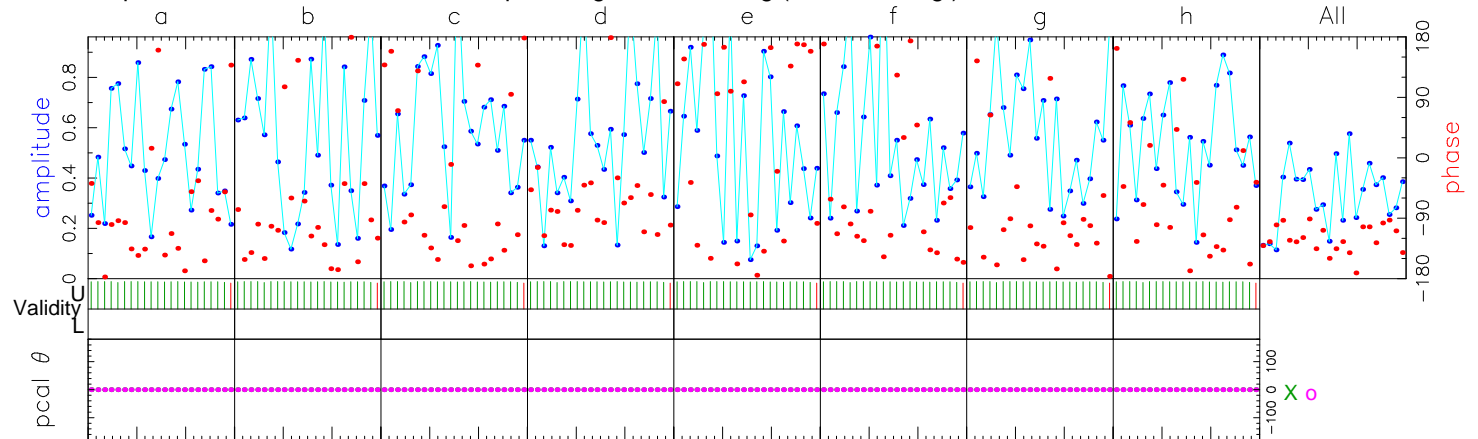


Fringe quality 9

SNR 11.7  
 Int time 178.028  
 Amp 0.321  
 Phase -119.1  
 PFD 3.3e-23  
 Delays (us)  
 SBD 0.017642  
 MBD -0.006389  
 Fringe rate (Hz)  
 -0.020468  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130401  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-116.1	-110.7	-144.9	-74.8	176.7	-122.8	-128.0	-90.5		-119.1
	0.4	0.4	0.4	0.4	0.3	0.4	0.4	0.2	Ampl.	0.3
	260.0	262.1	260.9	261.9	262.8	263.2	262.3	264.0	Sbd box	261.5
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
X:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
o	1000	1000	1000	1000	1000	1000	1000	1000		
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	2.14585655246E+03		Apriori delay (usec)		2.14583169154E+03		Resid mbdelay (usec)		-6.38908E-03	+/- 9.3E-05
Sband delay (usec)	2.14584933404E+03		Apriori clock (usec)		1.5742386E+01		Resid sbdelay (usec)		1.76425E-02	+/- 7.4E-04
Phase delay (usec)	2.14583168770E+03		Apriori clockrate (us/s)		5.2701902E-07		Resid phdelay (usec)		-3.83969E-06	+/- 3.2E-07
Delay rate (us/s)	-1.50261777756E+00		Apriori rate (us/s)		-1.50261753994E+00		Resid rate (us/s)		-2.37615E-07	+/- 3.0E-09
Total phase (deg)			Apriori accel (us/s/s)		4.89748422581E-06		Resid phase (deg)		-119.1	+/- 9.8

ph/seg (deg) RMS Theor. Amplitude 0.321 +/- 0.027 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 20.5 23.0 Search (1024X32) 0.310 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 40.6 40.1 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 35.9 13.9 Inc. seg. avg. 0.308 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 amp/frq (%) 22.2 24.2 Inc. frq. avg. 0.349 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00

X: az 271.1 el 45.2 pa 42.5 o: az 67.8 el 37.1 pa -67.8 u,v (fr/asec) 10817.780 1904.362 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/Xo..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/Xo.W.260.1273D9

Mk4/DiFX fourfit 3.20 rev 0

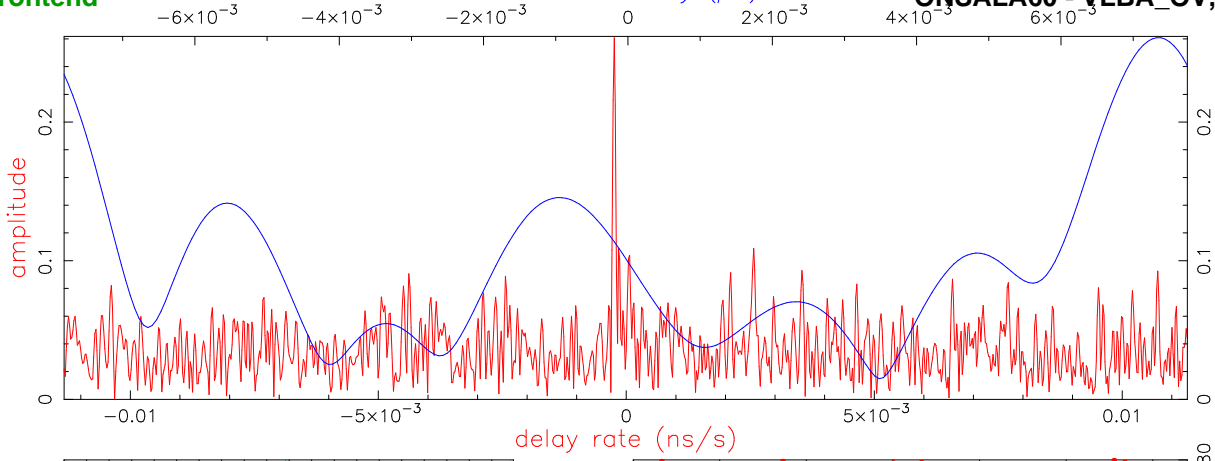
frontend

2013+370.1273D9, No0056, Xo

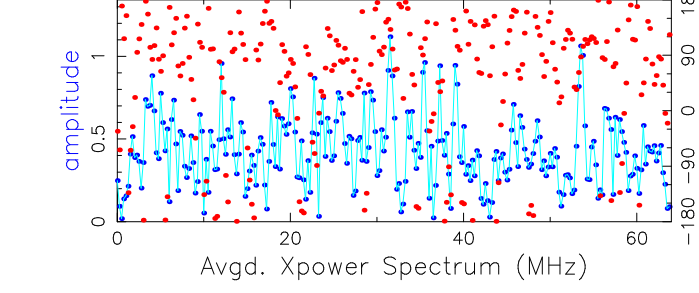
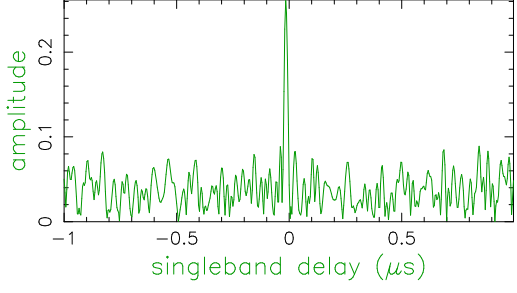
ONSALA60 - VLBA\_OV, fgroup W, pol RR

multiband delay ( $\mu$ s)

Fringe quality 9

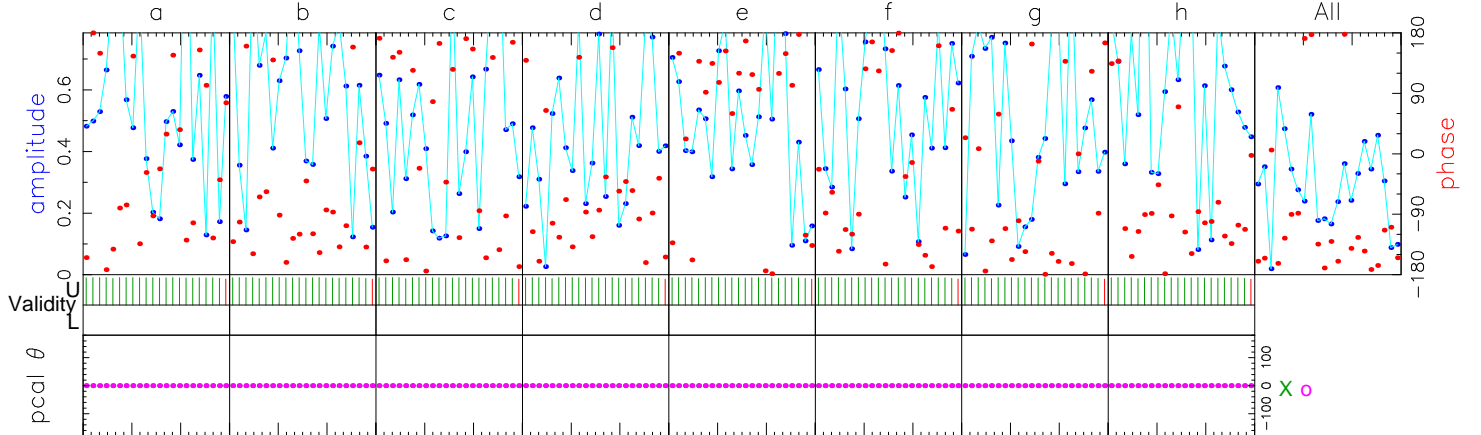


SNR 9.6  
 Int time 178.027  
 Amp 0.262  
 Phase -149.1  
 PFD 2.6e-13  
 Delays (us)  
 SBD -0.014883  
 MBD 0.007372  
 Fringe rate (Hz)  
 -0.020292  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



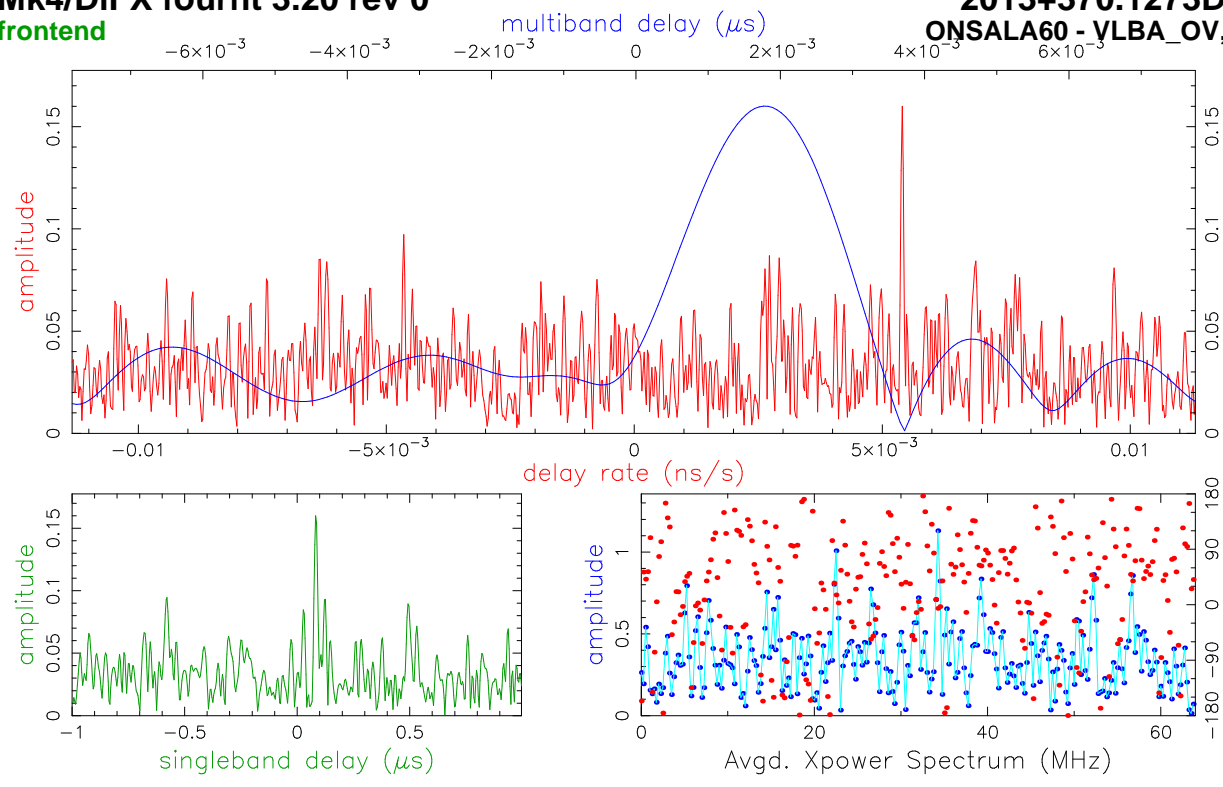
Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130404  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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



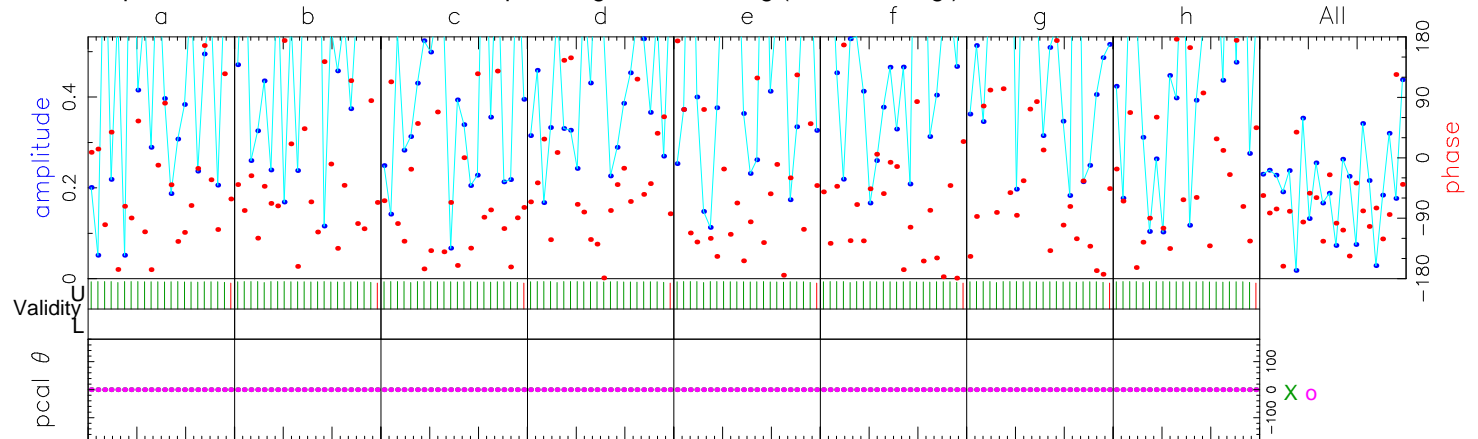
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
X	1000	1000	1000	1000	1000	1000	1000	1000		
X:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
X:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
X	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)	2.14582343880E+03									
Sband delay (usec)	2.14581680829E+03									
Phase delay (usec)	2.14583168673E+03									
Delay rate (us/s)	-1.50261777551E+00									
Total phase (deg)			178.1							
Apriori delay (usec)					2.14583169154E+03					
Apriori clock (usec)					1.5742386E+01					
Apriori clockrate (us/s)					5.2701902E-07					
Apriori rate (us/s)					-1.50261753994E+00					
Apriori accel (us/s/s)					4.89748422581E-06					
Resid mbdelay (usec)									7.37227E-03	+/- 1.1E-04
Resid sbdelay (usec)									-1.48832E-02	+/- 9.0E-04
Resid phdelay (usec)									-4.80791E-06	+/- 3.9E-07
Resid rate (us/s)									-2.35568E-07	+/- 3.7E-09
Resid phase (deg)									-149.1	+/- 12.0
Pcal mode:	MANUAL, MANUAL		PC period (AP's) 5, 5							
Pcal rate:	0.000E+00, 0.000E+00 (us/s)		sb window (us)		-1.000		1.000			
Bits/sample:	2x2		SampCntNorm: enabled		mb window (us)		-0.008		0.008	
Sample rate (MSamp/s):	128		dr window (ns/s)		-0.011		0.011			
Data rate (Mb/s):	2048		nlags: 256		t_cohere infinite		ion window (TEC)		0.00 0.00	
X: az 271.1 el 45.2 pa 42.5	o: az 67.8 el 37.1 pa -67.8		u, v (fr/asec) 10817.780 1904.362						simultaneous interpolator	

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/Xo..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/Xo.W.281.1273D9



Fringe quality 0  
 SNR 5.9  
 Int time 178.027  
 Amp 0.178  
 Phase -84.9  
 PFD 3.9e-01  
 Delays (us)  
 SBD 0.083229  
 MBD 0.001823  
 Fringe rate (Hz) 0.465153  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130406  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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



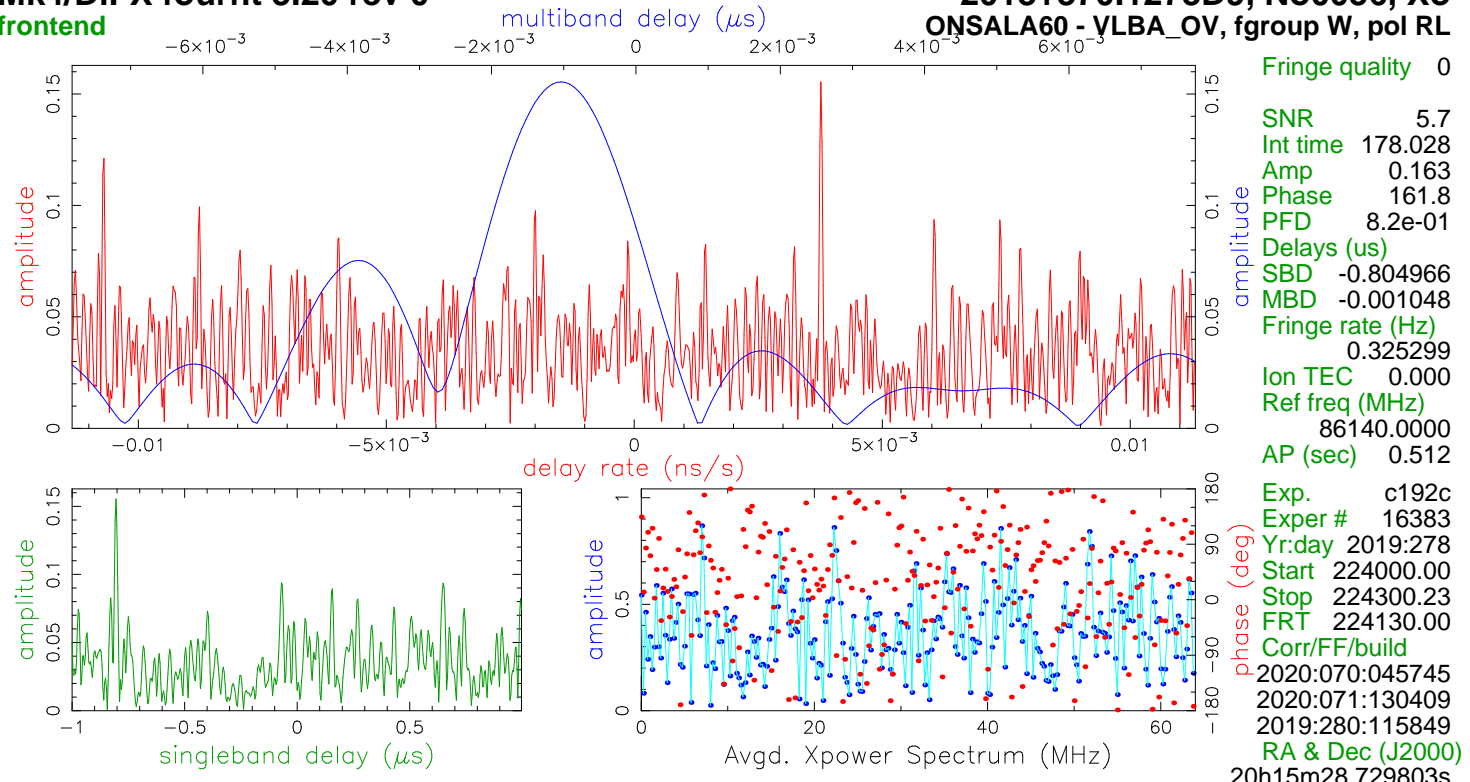
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-81.7	-65.9	-115.5	-68.9	-99.9	-94.2	-98.0	-57.7		-84.9
	0.2	0.3	0.2	0.2	0.2	0.2	0.1	0.1		0.2
	289.3	278.2	154.8	45.3	296.2	292.2	59.1	167.7		278.3
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
X	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
X:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
X:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
X	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)	2.14591163921E+03		Apriori delay (usec)		2.14583169154E+03		Resid mbdelay (usec)		1.82268E-03	+/- 1.8E-04
Sband delay (usec)	2.14591492079E+03		Apriori clock (usec)		1.5742386E+01		Resid sbdelay (usec)		8.32293E-02	+/- 1.5E-03
Phase delay (usec)	2.14583168880E+03		Apriori clockrate (us/s)		5.2701902E-07		Resid phdelay (usec)		-2.73670E-06	+/- 6.3E-07
Delay rate (us/s)	-1.50261213997E+00		Apriori rate (us/s)		-1.50261753994E+00		Resid rate (us/s)		5.39997E-06	+/- 6.0E-09
Total phase (deg)	242.4		Apriori accel (us/s/s)		4.89748422581E-06		Resid phase (deg)		-84.9	+/- 19.5
ph/seg (deg)	RMS 53.1	Theor. 45.6	Amplitude 0.178 +/- 0.030		Pcal mode: MANUAL, MANUAL		PC period (AP's) 5, 5		sb window (us)	-1.000 1.000
amp/seg (%)	68.9	79.6	Search (1024X32) 0.157		Pcal rate: 0.000E+00, 0.000E+00 (us/s)		SampCntNorm: enabled		mb window (us)	-0.008 0.008
ph/frq (deg)	21.5	27.5	Inc. seg. avg. 0.174		Sample rate(MISamp/s): 128		Data rate(Mb/s): 2048		dr window (ns/s)	-0.011 0.011
amp/frq (%)	24.9	48.0	Inc. frq. avg. 0.166		Data rate(Mb/s): 2048		nlags: 256 t_cohere infinite		ion window (TEC)	0.00 0.00
X: az 271.1 el 45.2 pa 42.5	o: az 67.8 el 37.1 pa -67.8		u,v (fr/asec) 10817.780 1904.362						simultaneous interpolator	
Control file: cf_1234_gmva Input file: /Exps/c192c/v1_CygA2/1234/No0056/Xo..1273D9 Output file: /Exps/c192c/v1_CygA2/1234/No0056/Xo.W.299.1273D9										

Mk4/DiFX fourfit 3.20 rev 0

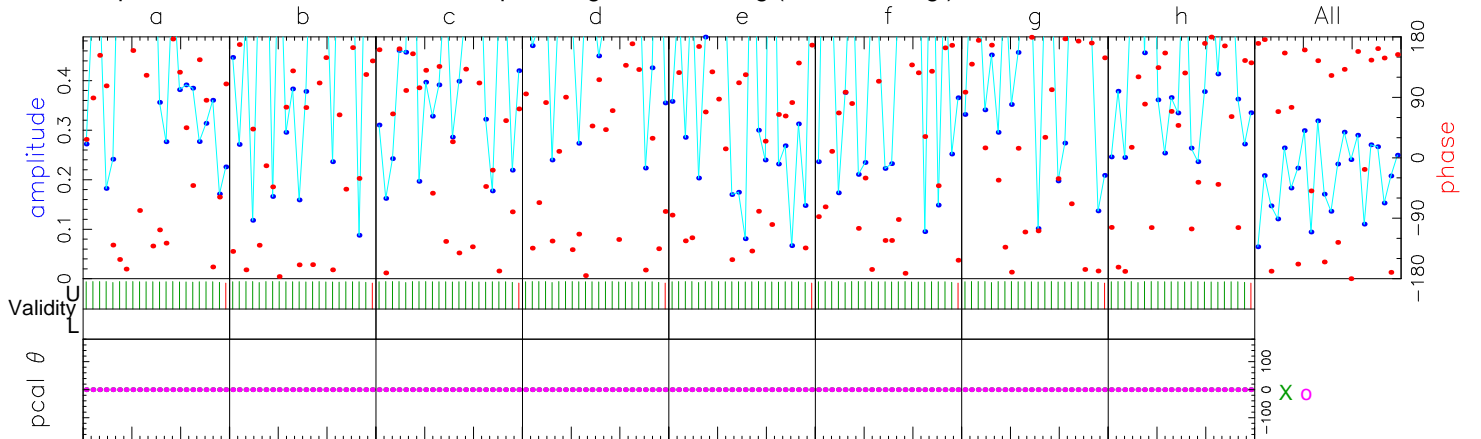
frontend

2013+370.1273D9, No0056, Xo

ONSALA60 - VLBA\_OV, fgroup W, pol RL



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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All		
	174.2	157.8	147.9	142.4	173.9	164.4	-179.2	148.2	Phase	161.8		
	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.2	Ampl.	0.1		
	487.8	401.1	468.3	424.1	487.7	147.3	49.9	363.3	Sbd box	50.9		
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used			
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs			
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs			
X:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase			
X:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC			
X	1000	1000	1000	1000	1000	1000	1000	1000	PC amp			
o	1000	1000	1000	1000	1000	1000	1000	1000				
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids			
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks			
									Chan ids			
									Tracks			
Group delay (usec)(sbd)	2.14503376843E+03		Apriori delay (usec)		2.14583169154E+03		Resid mbdelay (usec)		-1.04810E-03	+/- 1.9E-04		
Sband delay (usec)	2.14502672529E+03		Apriori clock (usec)		1.5742386E+01		Resid sbdelay (usec)		-8.04966E-01	+/- 1.5E-03		
Phase delay (usec)	2.14583169676E+03		Apriori clockrate (us/s)		5.2701902E-07		Resid phdelay (usec)		5.21874E-06	+/- 6.5E-07		
Delay rate (us/s)	-1.50261376354E+00		Apriori rate (us/s)		-1.50261753994E+00		Resid rate (us/s)		3.77640E-06	+/- 6.3E-09		
Total phase (deg)	129.1		Apriori accel (us/s/s)		4.89748422581E-06		Resid phase (deg)		161.8	+/- 20.2		
	RMS	Theor.	Amplitude	0.163 +/- 0.029		Pcal mode: MANUAL, MANUAL		PC period (AP's) 5, 5				
ph/seg (deg)	62.1	47.4	Search (1024X32)	0.149		Pcal rate: 0.000E+00, 0.000E+00 (us/s)		sb window (us)	-1.000	1.000		
amp/seg (%)	56.7	82.7	Interp.	0.000		Bits/sample: 2x2		SampCntNorm: enabled	mb window (us)	-0.008	0.008	
ph/frq (deg)	15.5	28.6	Inc. seg. avg.	0.161		Sample rate(MISamp/s): 128		dr window (ns/s)	-0.011	0.011		
amp/frq (%)	21.6	49.9	Inc. frq. avg.	0.149		Data rate(Mb/s): 2048		nlags: 256	t_cohere infinite	ion window (TEC)	0.00	0.00
X: az 271.1 el 45.2 pa 42.5	o: az 67.8 el 37.1 pa -67.8		u,v (fr/asec) 10817.780 1904.362						simultaneous interpolator			
Control file: cf_1234_gmva Input file: /Exps/c192c/v1_CygA2/1234/No0056/Xo..1273D9 Output file: /Exps/c192c/v1_CygA2/1234/No0056/Xo.W.317.1273D9												



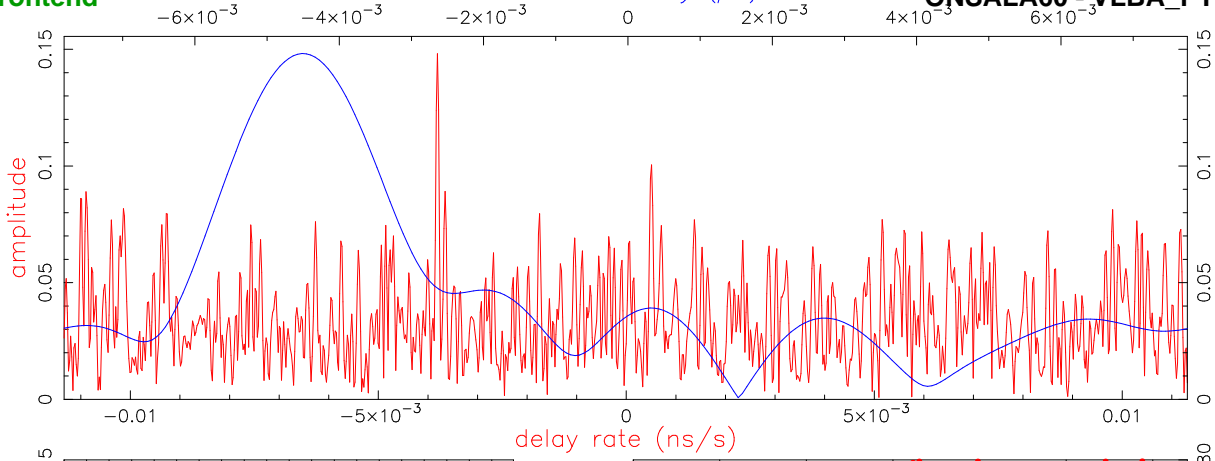
Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.1273D9, No0056, Xp

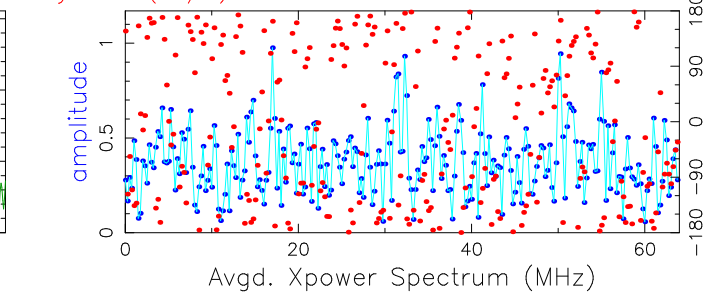
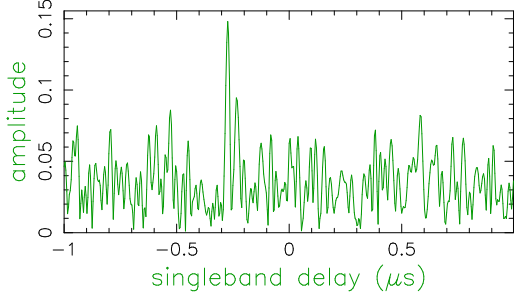
ONSALA60 - VLBA\_PT, fgroup W, pol LL

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



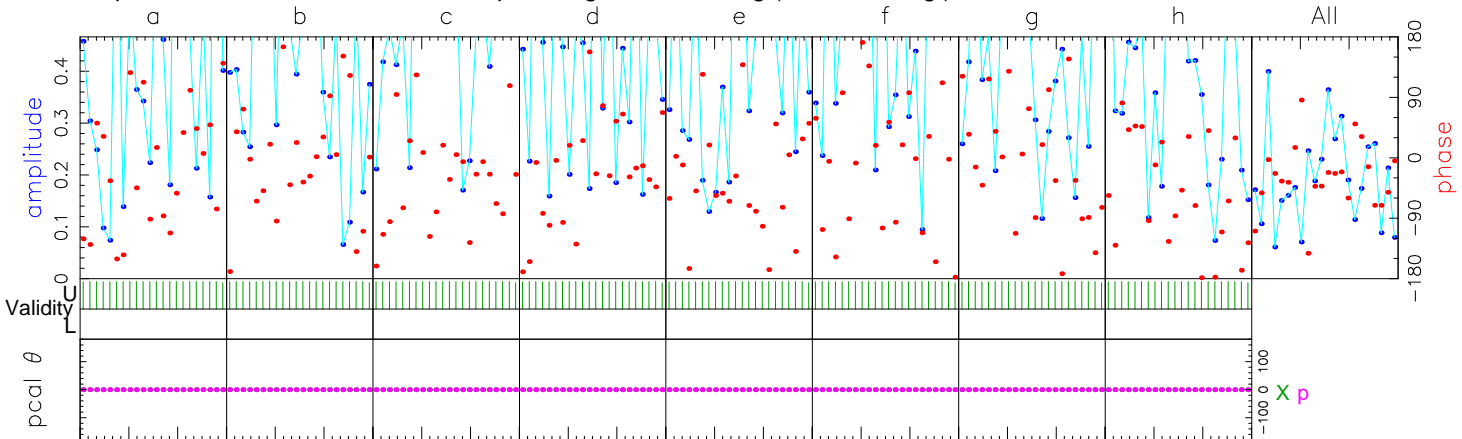
Fringe quality 0

SNR 5.4  
Int time 179.584  
Amp 0.156  
Phase -31.3  
PFD 1.0e+00  
Delays (us)  
SBD -0.272811  
MBD -0.004466  
Fringe rate (Hz)  
-0.327895  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512



Exp. c192c  
Exper # 16383  
Yr:day 2019:278  
Start 224000.00  
Stop 224300.23  
FRT 224130.00  
Corr/FF/build  
2020:070:045745  
2020:071:130402  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-54.6	-19.4	-33.9	-21.1	-36.9	-0.8	-40.1	-42.8	Phase	-31.3
	0.1	0.2	0.2	0.3	0.2	0.1	0.1	0.2	Ampl.	0.1
	75.4	407.1	419.9	186.9	446.5	438.9	148.1	458.2	Sbd box	187.2
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
p	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
X:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
p	1000	1000	1000	1000	1000	1000	1000	1000		
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
p	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	2.87114085563E+02		Apriori delay (usec)		2.87384176634E+02		Resid mbdelay (usec)		-4.46607E-03	+/- 2.0E-04
Sband delay (usec)	2.87111365884E+02		Apriori clock (usec)		2.0428177E+01		Resid sbdelay (usec)		-2.72811E-01	+/- 1.6E-03
Phase delay (usec)	2.87384175625E+02		Apriori clockrate (us/s)		3.2411343E-07		Resid phdelay (usec)		-1.00836E-06	+/- 6.8E-07
Delay rate (us/s)	-1.45348502153E+00		Apriori rate (us/s)		-1.45348121499E+00		Resid rate (us/s)		-3.80654E-06	+/- 6.5E-09
Total phase (deg)	319.8		Apriori accel (us/s/s)		1.76303395406E-05		Resid phase (deg)		-31.3	+/- 21.1

ph/seg (deg) 48.7 49.4 Search (1024X32) 0.145 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 68.5 86.2 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 18.1 29.8 Inc. seg. avg. 0.149 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 45.5 52.0 Inc. frq. avg. 0.140 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
X: az 271.1 el 45.2 pa 42.5 p: az 68.8 el 43.7 pa -75.5 u,v (fr/asec) 10474.464 2958.744 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/Xp..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/Xp.W.265.1273D9

Mk4/DiFX fourfit 3.20 rev 0

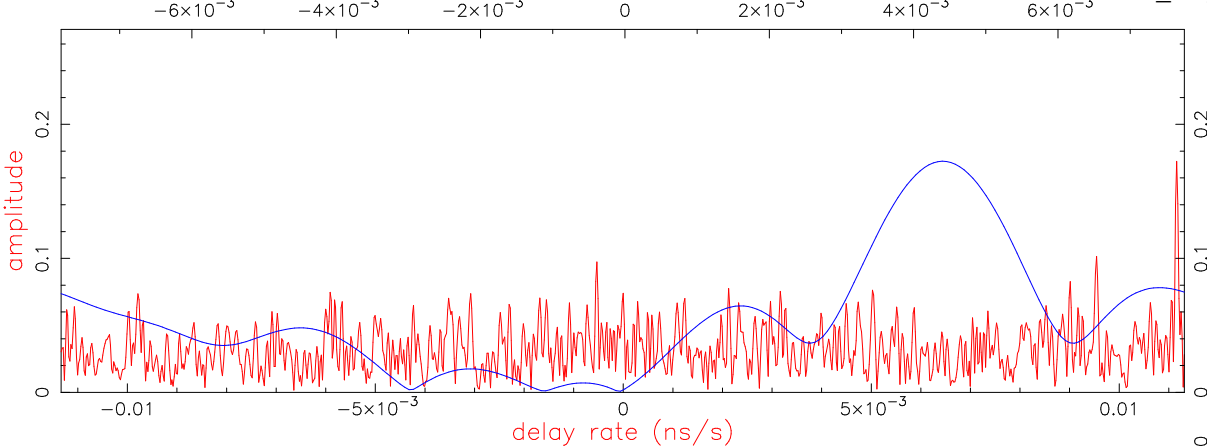
frontend

2013+370.1273D9, No0056, Xp

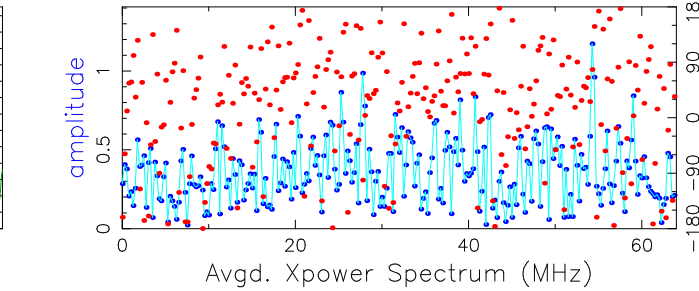
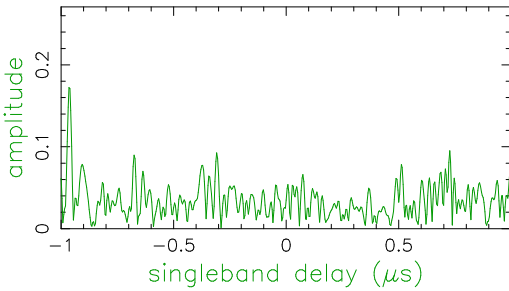
ONSALA60 - VLBA\_PT, fgroup W, pol RR

multiband delay ( $\mu$ s)

Fringe quality 0

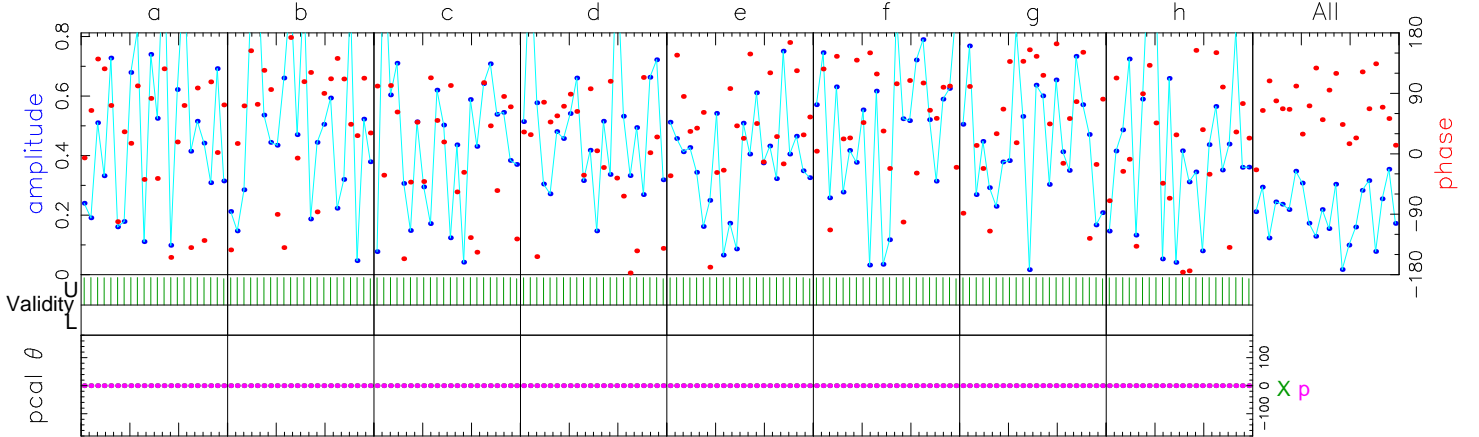


SNR 6.4  
 Int time 179.584  
 Amp 0.271  
 Phase 69.7  
 PFD 2.0e-02  
 Delays (us)  
 SBD -0.963130  
 MBD 0.004441  
 Fringe rate (Hz)  
 0.962201  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130404  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

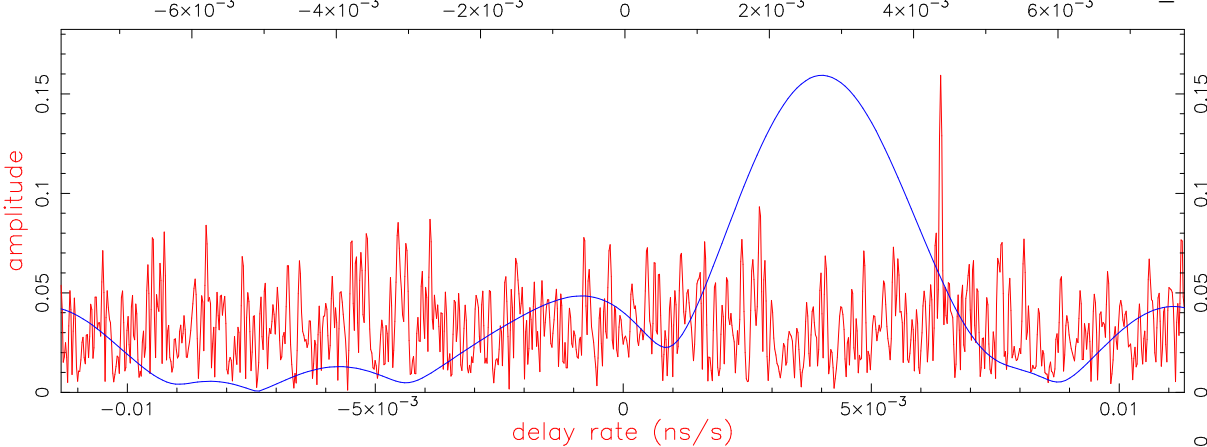
Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



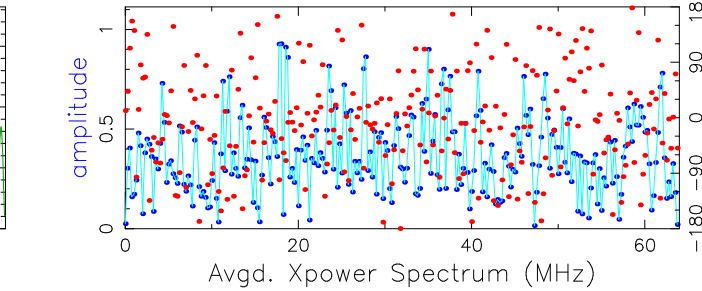
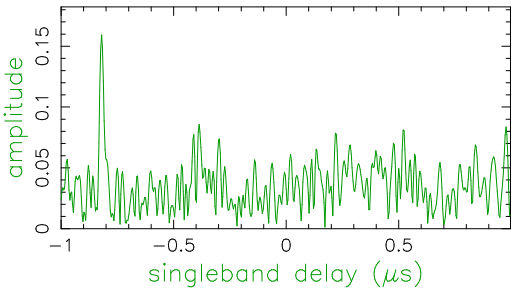
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All			
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0					
X	1000	1000	1000	1000	1000	1000	1000	1000					
p	1000	1000	1000	1000	1000	1000	1000	1000					
X:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0					
X:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0					
X	1000	1000	1000	1000	1000	1000	1000	1000					
p	1000	1000	1000	1000	1000	1000	1000	1000					
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR					
p	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR					
Group delay (usec)(sbd)	2.86419867314E+02					2.87384176634E+02			Resid mbdelay (usec)	4.44068E-03	+/- 1.7E-04		
Sband delay (usec)	2.86421046634E+02					2.0428177E+01			Resid sbdelay (usec)	-9.63130E-01	+/- 1.3E-03		
Phase delay (usec)	2.87384178882E+02					3.2411343E-07			Resid phdelay (usec)	2.24865E-06	+/- 5.8E-07		
Delay rate (us/s)	-1.45347004479E+00					-1.45348121499E+00			Resid rate (us/s)	1.11702E-05	+/- 5.5E-09		
Total phase (deg)			60.8			1.76303395406E-05			Resid phase (deg)	69.7	+/- 17.9		
	RMS	Theor.	Amplitude	0.271 +/- 0.042		Pcal mode: MANUAL, MANUAL			PC period (AP's)	5, 5			
ph/seg (deg)	40.4	41.9	Search (1024X32)	0.164		Pcal rate: 0.000E+00, 0.000E+00 (us/s)			sb window (us)	-1.000	1.000		
amp/seg (%)	55.6	73.2	Interp.	0.000		Bits/sample: 2x2			SampCntNorm: enabled	mb window (us)	-0.008	0.008	
ph/frq (deg)	30.3	25.3	Inc. seg. avg.	0.261		Sample rate(MISamp/s): 128			dr window (ns/s)	-0.011	0.011		
amp/frq (%)	28.4	44.1	Inc. frq. avg.	0.271		Data rate(Mb/s): 2048			nlags: 256	t_cohere infinite	ion window (TEC)	0.00	0.00
X: az 271.1 el 45.2 pa 42.5			p: az 68.8 el 43.7 pa -75.5			u,v (fr/asec) 10474.464 2958.744						simultaneous interpolator	

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

Fringe quality 0

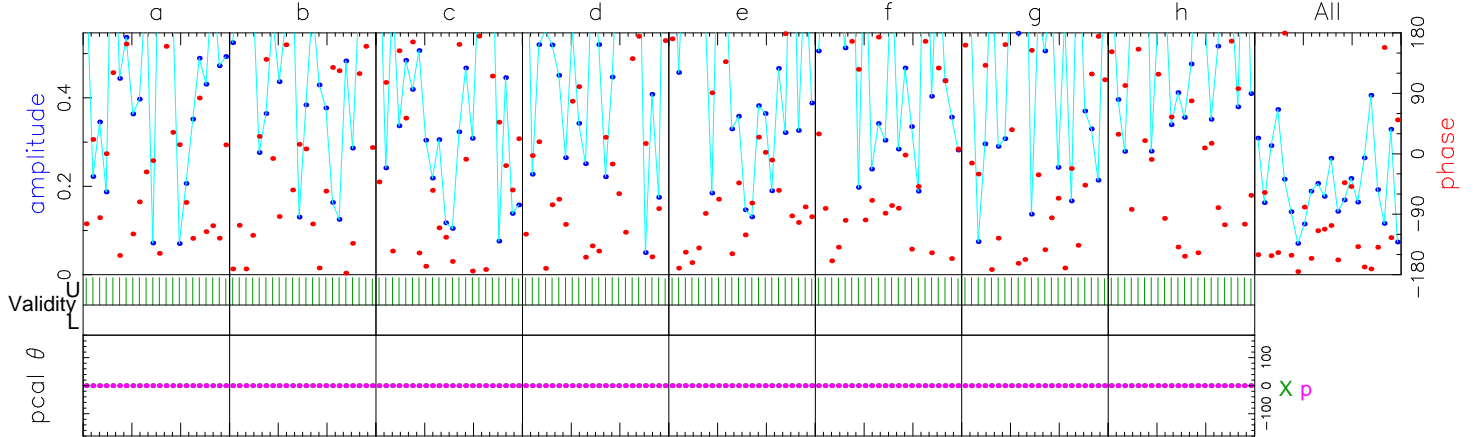


SNR 5.8  
 Int time 179.584  
 Amp 0.182  
 Phase -137.6  
 PFD 4.9e-01  
 Delays (us)  
 SBD -0.820180  
 MBD 0.002727  
 Fringe rate (Hz)  
 0.552524  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130406  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-123.3	-142.1	-170.9	-140.3	-118.8	-139.9	-155.7	-119.2	Phase	-137.6
	0.2	0.2	0.1	0.2	0.3	0.2	0.2	0.1	Ampl.	0.2
	53.5	56.9	20.3	343.8	312.4	7.2	423.3	384.4	Sbd box	47.0
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
p	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
X:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
p	1000	1000	1000	1000	1000	1000	1000	1000		
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
p	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	2.86558778845E+02		Apriori delay (usec)		2.87384176634E+02		Resid mbdelay (usec)		2.72721E-03	+/- 1.9E-04
Sband delay (usec)	2.86563996634E+02		Apriori clock (usec)		2.0428177E+01		Resid sbdelay (usec)		-8.20180E-01	+/- 1.5E-03
Phase delay (usec)	2.87384172198E+02		Apriori clockrate (us/s)		3.2411343E-07		Resid phdelay (usec)		-4.43578E-06	+/- 6.3E-07
Delay rate (us/s)	-1.45347480073E+00		Apriori rate (us/s)		-1.45348121499E+00		Resid rate (us/s)		6.41426E-06	+/- 6.1E-09
Total phase (deg)	213.5		Apriori accel (us/s/s)		1.76303395406E-05		Resid phase (deg)		-137.6	+/- 19.6

	RMS	Theor.	Amplitude	0.182 +/- 0.031	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000
ph/seg (deg)	55.7	46.0	Search (1024X32)	0.154	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	SampCntNorm: enabled	mb window (us)	-0.008	0.008
amp/seg (%)	63.9	80.3	Interp.	0.000	Sample rate(MISamp/s): 128	nlags: 256	dr window (ns/s)	-0.011	0.011
ph/frq (deg)	19.9	27.8	Inc. seg. avg.	0.181	Data rate(Mb/s): 2048	t_cohere infinite	ion window (TEC)	0.00	0.00
amp/frq (%)	34.3	48.4	Inc. frq. avg.	0.170					

X: az 271.1 el 45.2 pa 42.5 p: az 68.8 el 43.7 pa -75.5 u,v (fr/asec) 10474.464 2958.744 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/Xp..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/Xp.W.300.1273D9

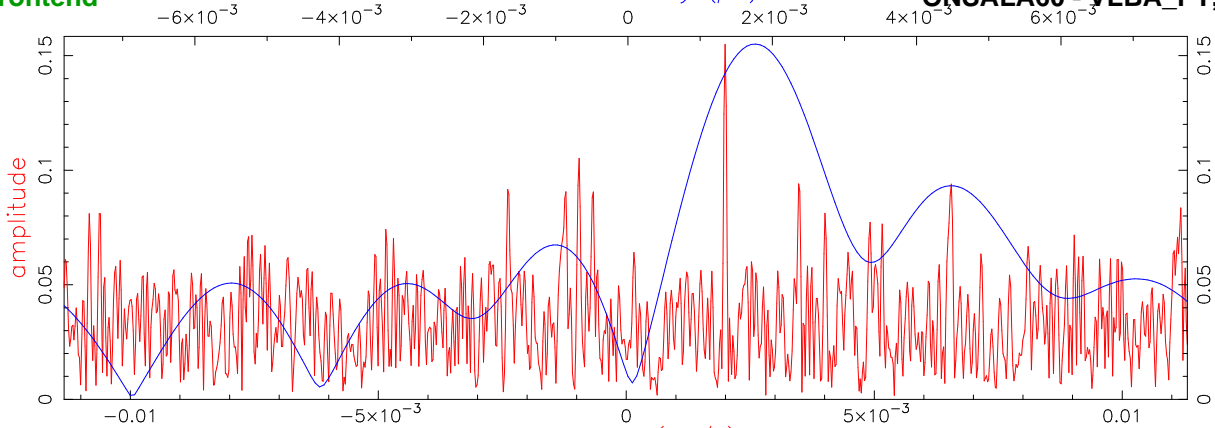
Mk4/DiFX fourfit 3.20 rev 0

frontend

2013+370.1273D9, No0056, Xp

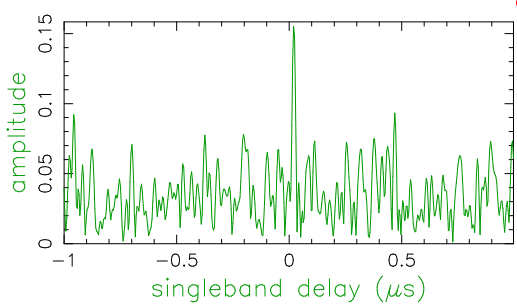
ONSALA60 - VLBA\_PT, fgroup W, pol RL

multiband delay ( $\mu$ s)

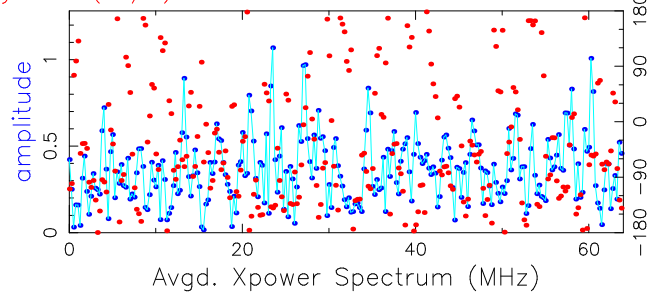


Fringe quality 0

SNR 5.7  
Int time 179.584  
Amp 0.158  
Phase 126.0  
PFD 7.1e-01  
Delays (us)  
SBD 0.020684  
MBD 0.001805  
Fringe rate (Hz) 0.171513  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512

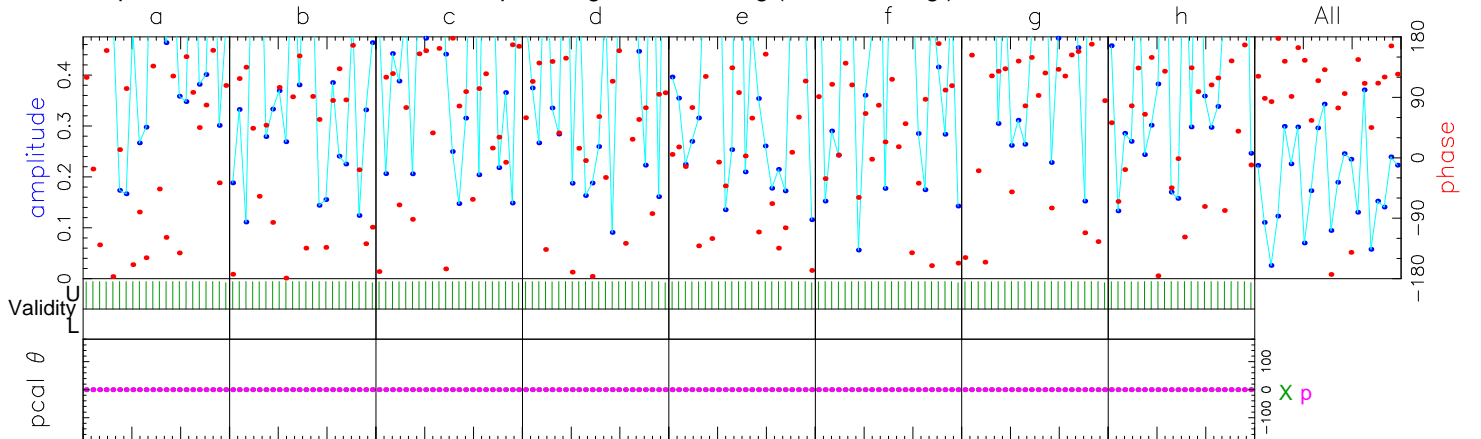


delay rate (ns/s)



Exp. c192c  
Exper # 16383  
Yr:day 2019:278  
Start 224000.00  
Stop 224300.23  
FRT 224130.00  
Corr/FF/build  
2020:070:045745  
2020:071:130409  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

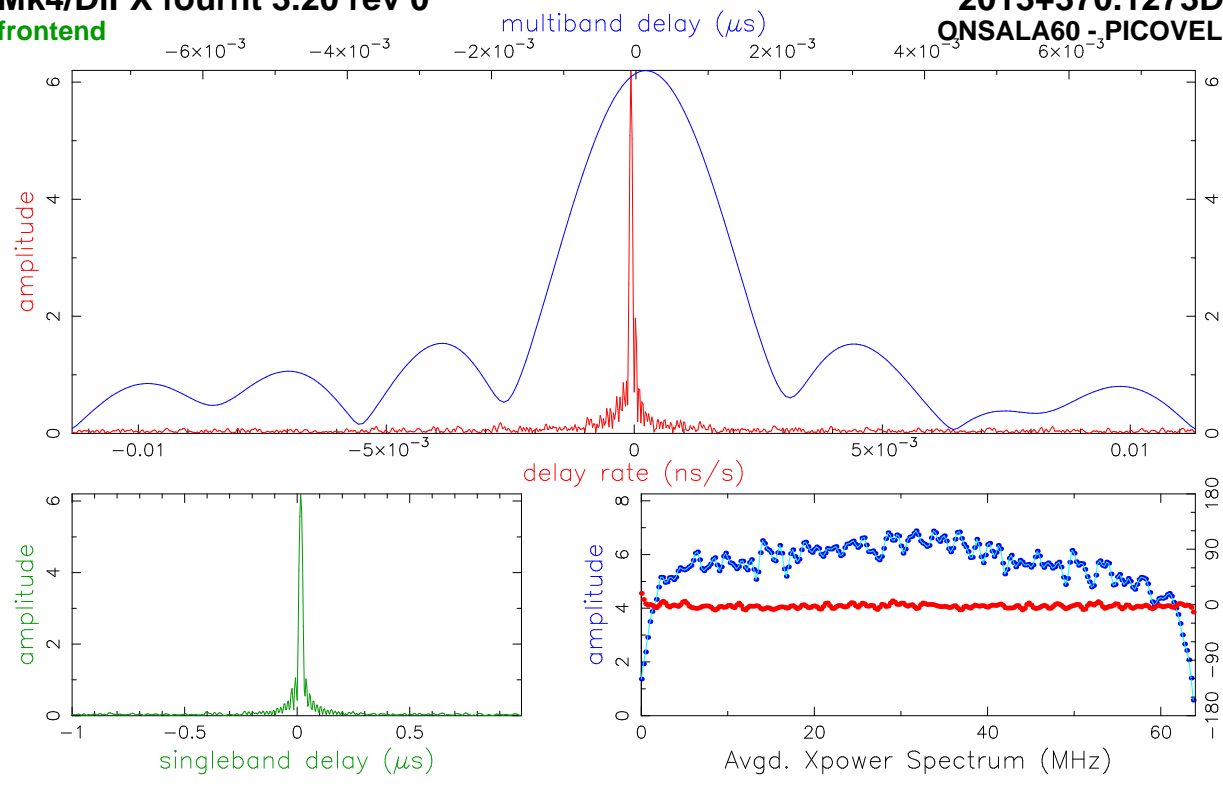
Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	149.0	132.6	133.5	102.0	57.8	96.5	153.7	124.5	Phase	126.0
X	0.2	0.1	0.2	0.1	0.1	0.2	0.4	0.2	Ampl.	0.2
p	353.6	244.2	192.0	120.0	281.2	353.4	262.2	424.5	Sbd box	262.3
X:p	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
X:p	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
X:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
p	1000	1000	1000	1000	1000	1000	1000	1000		
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
p	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

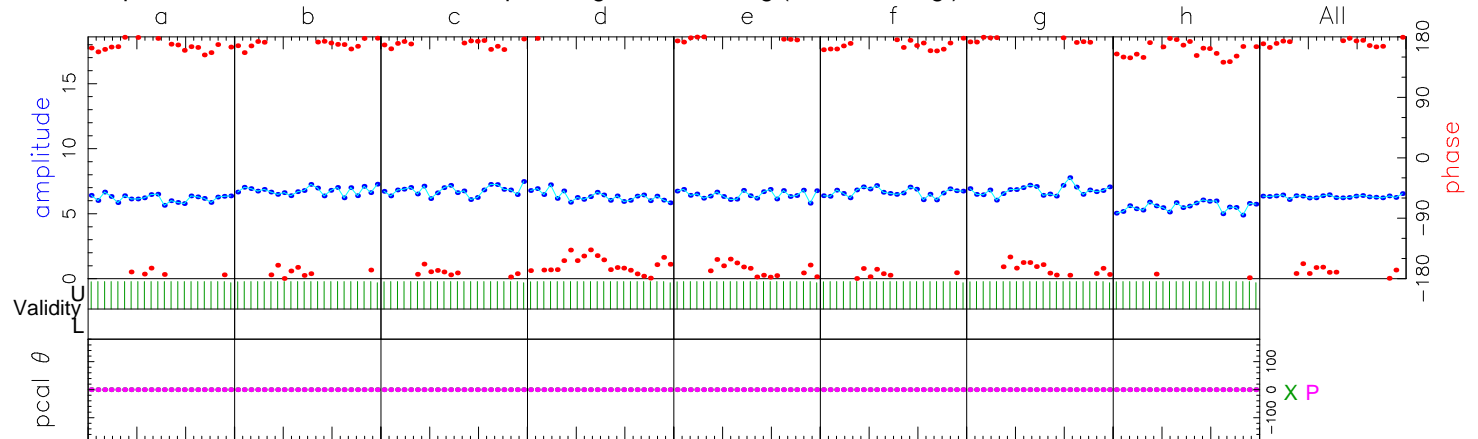
Group delay (usec)(sbd)	2.87401606259E+02	Apriori delay (usec)	2.87384176634E+02	Resid mbdelay (usec)	1.80462E-03	+/-	1.9E-04
Sband delay (usec)	2.87404860884E+02	Apriori clock (usec)	2.0428177E+01	Resid sbdelay (usec)	2.06842E-02	+/-	1.5E-03
Phase delay (usec)	2.87384180696E+02	Apriori clockrate (us/s)	3.2411343E-07	Resid phdelay (usec)	4.06225E-06	+/-	6.4E-07
Delay rate (us/s)	-1.45347922390E+00	Apriori rate (us/s)	-1.45348121499E+00	Resid rate (us/s)	1.99109E-06	+/-	6.2E-09
Total phase (deg)	117.1	Apriori accel (us/s/s)	1.76303395406E-05	Resid phase (deg)	126.0	+/-	20.0

ph/seg (deg) 42.4 46.9 Search (1024X32) 0.153 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 63.8 81.8 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 35.3 28.3 Inc. seg. avg. 0.147 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 52.2 49.3 Inc. frq. avg. 0.160 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
X: az 271.1 el 45.2 pa 42.5 p: az 68.8 el 43.7 pa -75.5 u,v (fr/asec) 10474.464 2958.744 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/Xp..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/Xp.W.316.1273D9



Fringe quality 8  
 SNR 227.3  
 Int time 179.587  
 Amp 6.202  
 Phase 179.6  
 PFD 0.0e+00  
 Delays (us)  
 SBD 0.015944  
 MBD 0.000144  
 Fringe rate (Hz)  
 -0.004848  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130410  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

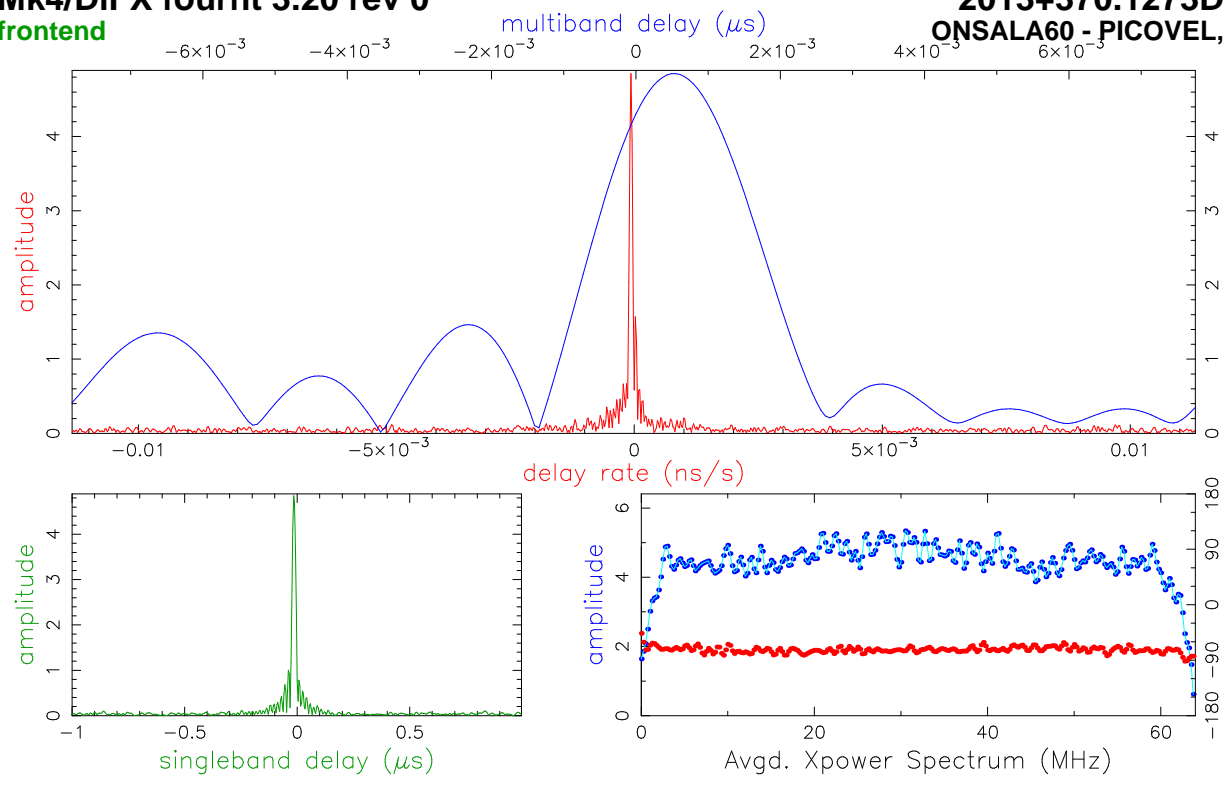
Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	171.0	176.7	177.5	-160.6	-172.7	173.8	-172.8	161.8	Phase	179.6
	6.1	6.6	6.6	6.2	6.3	6.5	6.6	5.4	Ampl.	6.3
	261.1	261.2	261.0	261.2	260.8	261.2	261.0	260.6	Sbd box	261.1
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
P	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
X:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
P	1000	1000	1000	1000	1000	1000	1000	1000		
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
P	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

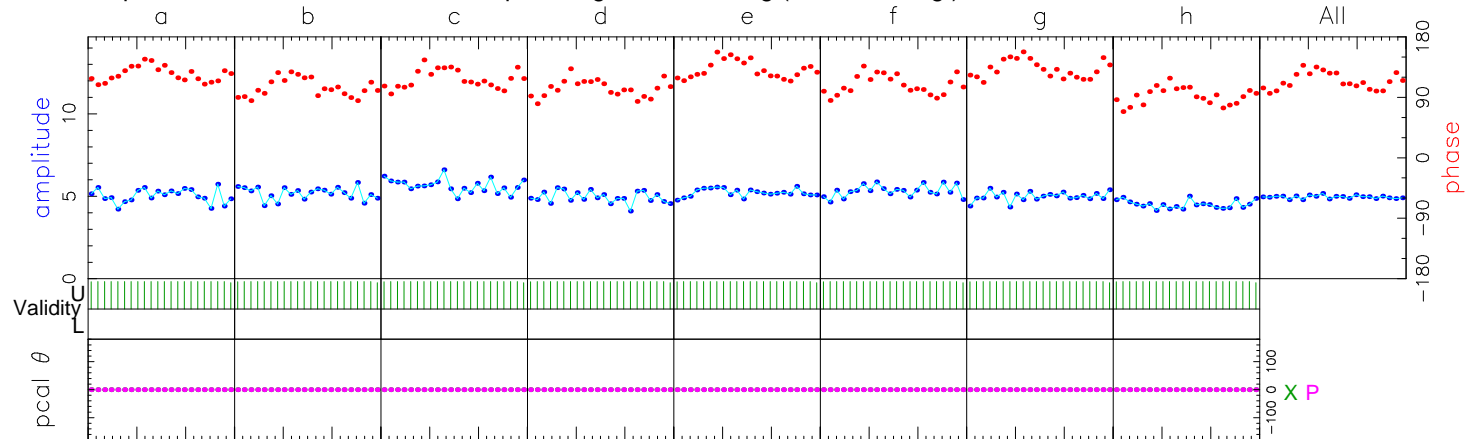
Group delay (usec)(sbd)	-1.86351304128E+03	Apriori delay (usec)	-1.86352881019E+03	Resid mbdelay (usec)	1.43914E-04	+/-	4.8E-06
Sband delay (usec)	-1.86351286644E+03	Apriori clock (usec)	3.2560566E+01	Resid sbdelay (usec)	1.59438E-02	+/-	3.8E-05
Phase delay (usec)	-1.86352880440E+03	Apriori clockrate (us/s)	8.8100003E-07	Resid phdelay (usec)	5.79282E-06	+/-	1.6E-08
Delay rate (us/s)	1.32744362753E-01	Apriori rate (us/s)	1.32744419031E-01	Resid rate (us/s)	-5.62779E-08	+/-	1.6E-10
Total phase (deg)	-75.9	Apriori accel (us/s/s)	2.64528031449E-05	Resid phase (deg)	179.6	+/-	0.5

ph/seg (deg)	11.3	RMS	11.3	Theor.	1.2	Amplitude	6.202 +/- 0.027	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5
amp/seg (%)	2.5	Search (1024X32)	5.896	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	Interp.	0.000	Bits/sample:	2x2	SampCntNorm:	enabled
ph/frq (deg)	12.6	Inc. seg. avg.	6.319	Sample rate (MSamp/s):	128	Inc. frq. avg.	6.305	Data rate (Mb/s):	2048	nlags:	256
amp/frq (%)	6.6	Inc. frq. avg.	6.305	Data rate (Mb/s):	2048	nlags:	256	t_cohere:	infinite	ion window (TEC)	0.00



Fringe quality 7  
 SNR 179.3  
 Int time 179.587  
 Amp 4.892  
 Phase 114.4  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.014398  
 MBD 0.000568  
 Fringe rate (Hz)  
 -0.004855  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130412  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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

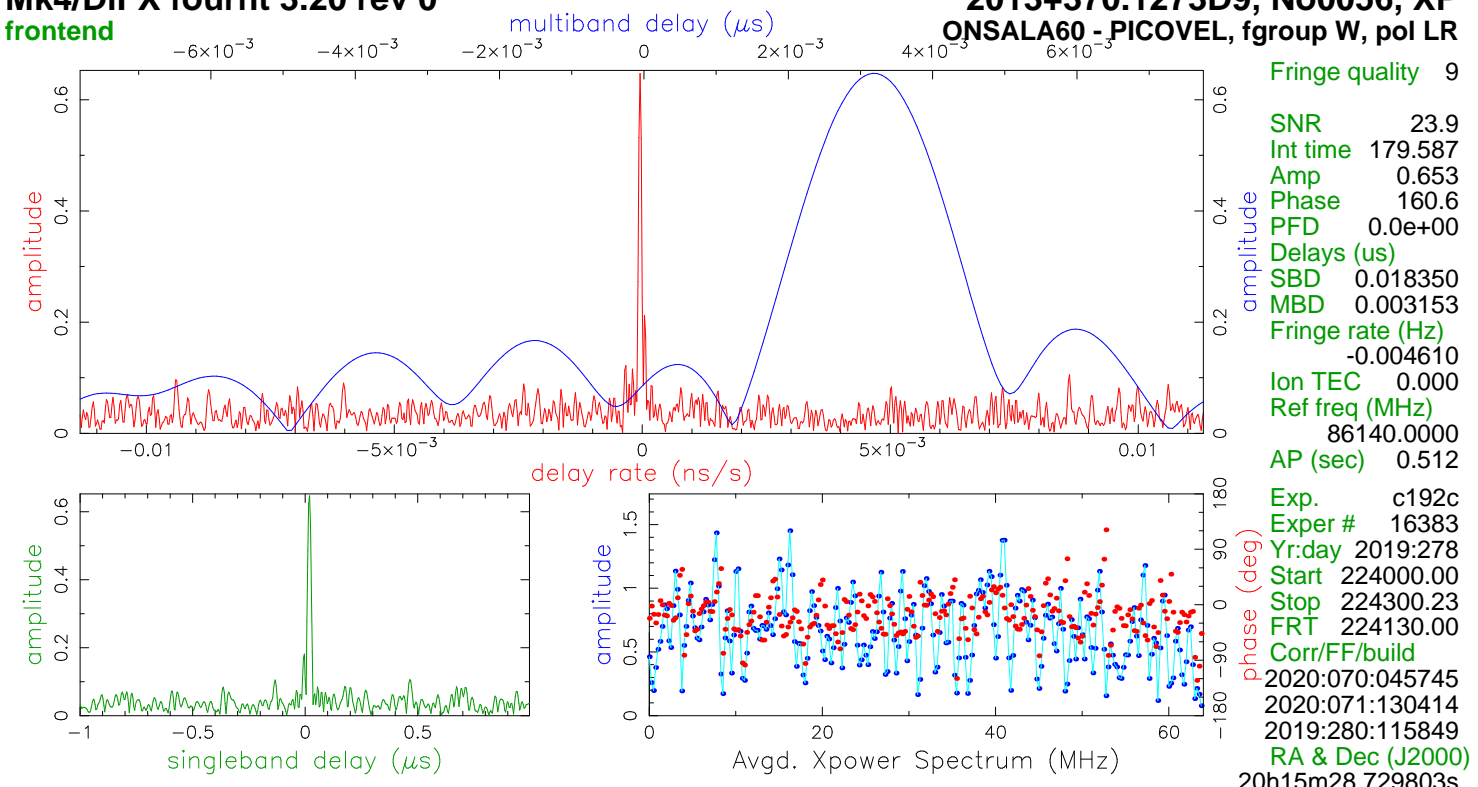


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	124.5	103.9	117.4	103.0	131.3	108.9	131.9	91.3	Phase	114.4
X	4.9	5.0	5.5	4.8	5.1	5.2	4.9	4.4	Ampl.	5.0
P	253.3	253.0	253.2	253.0	253.4	253.1	253.1	252.5	Sbd box	253.3
X:P	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
X:1000	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
X:1000	1000	1000	1000	1000	1000	1000	1000	1000	Manl PC	
P	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
P	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
Group delay (usec)(sbd)	-1.86354386687E+03								Resid mbdelay (usec)	5.68320E-04 +/- 6.1E-06
Sband delay (usec)	-1.86354320819E+03								Resid sbdelay (usec)	-1.43980E-02 +/- 4.8E-05
Phase delay (usec)	-1.86352880650E+03								Resid phdelay (usec)	3.68908E-06 +/- 2.1E-08
Delay rate (us/s)	1.32744362667E-01								Resid rate (us/s)	-5.63643E-08 +/- 2.0E-10
Total phase (deg)		-141.2							Resid phase (deg)	114.4 +/- 0.6

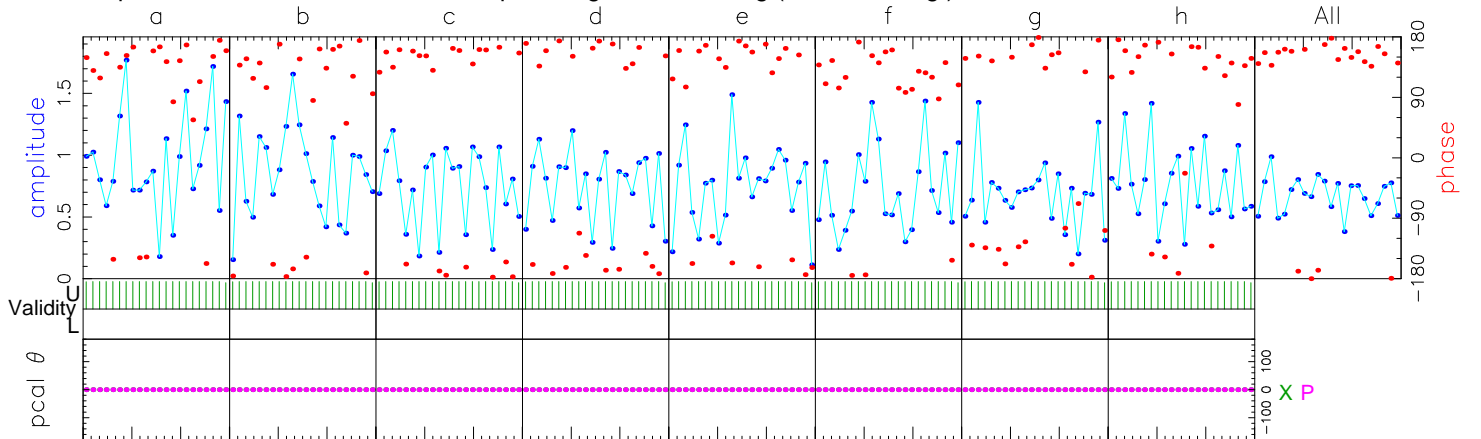
ph/seg (deg) 12.3 1.5 Search (1024X32) 4.652 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 2.4 2.6 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 15.8 0.9 Inc. seg. avg. 4.958 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 6.2 1.6 Inc. frq. avg. 4.982 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 X: az 271.1 el 45.2 pa 42.5 P: az 284.9 el 53.0 pa 75.7 u,v (fr/asec) -931.749 3276.282 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/XP..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/XP.W.330.1273D9

Mk4/DiFX fourfit 3.20 rev 0  
frontend

2013+370.1273D9, No0056, XP  
ONSALA60 - PICOVEL, fgroup W, pol LR



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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
X	1000	1000	1000	1000	1000	1000	1000	1000		
P	1000	1000	1000	1000	1000	1000	1000	1000		
X:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
X:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
X	1000	1000	1000	1000	1000	1000	1000	1000		
P	1000	1000	1000	1000	1000	1000	1000	1000		
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		Chan ids
P	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		Tracks

Group delay (usec)(sbd)	-1.86351003217E+03	Apriori delay (usec)	-1.86352881019E+03	Resid mbdelay (usec)	3.15303E-03	+/-	4.5E-05
Sband delay (usec)	-1.86351046019E+03	Apriori clock (usec)	3.2560566E+01	Resid sbdelay (usec)	1.83500E-02	+/-	3.6E-04
Phase delay (usec)	-1.86352880501E+03	Apriori clockrate (us/s)	8.8100003E-07	Resid phdelay (usec)	5.17961E-06	+/-	1.5E-07
Delay rate (us/s)	1.32744365512E-01	Apriori rate (us/s)	1.32744419031E-01	Resid rate (us/s)	-5.35188E-08	+/-	1.5E-09
Total phase (deg)	-94.9	Apriori accel (us/s/s)	2.64528031449E-05	Resid phase (deg)	160.6	+/-	4.8

ph/seg (deg)	16.2	Theor.	11.2	Amplitude	0.653 +/- 0.027	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5			
amp/seg (%)	22.1		19.6	Search (1024X32)	0.614	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000			
ph/frq (deg)	15.1		6.8	Interp.	0.000	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008		
amp/frq (%)	11.2		11.8	Inc. seg. avg.	0.663	Sample rate (MSamp/s):	128	dr window (ns/s)	-0.011 0.011			
				Inc. frq. avg.	0.659	Data rate (Mb/s):	2048	nlags:	256	t_cohere infinite	ion window (TEC)	0.00 0.00

X: az 271.1 el 45.2 pa 42.5 P: az 284.9 el 53.0 pa 75.7 u,v (fr/asec) -931.749 3276.282 simultaneous interpolator

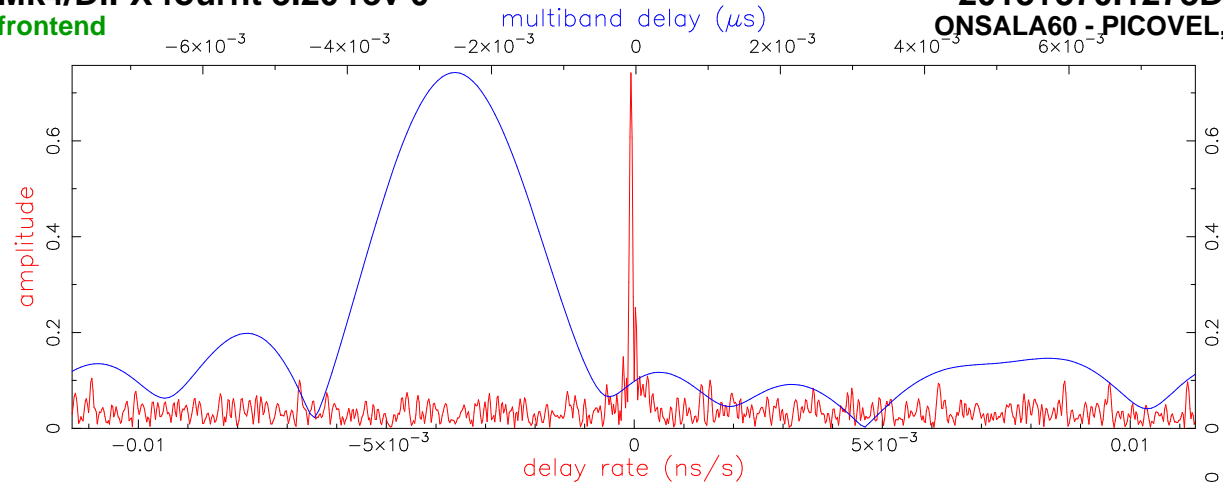
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/XP..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/XP.W.341.1273D9

Mk4/DiFX fourfit 3.20 rev 0

frontend

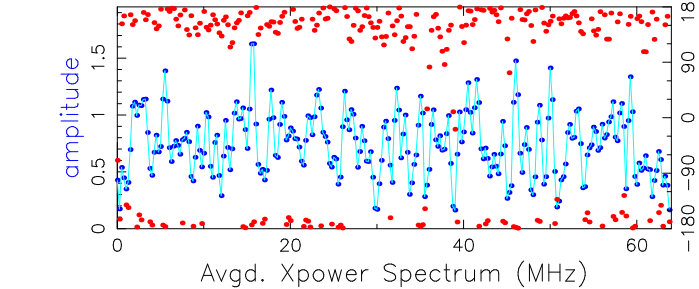
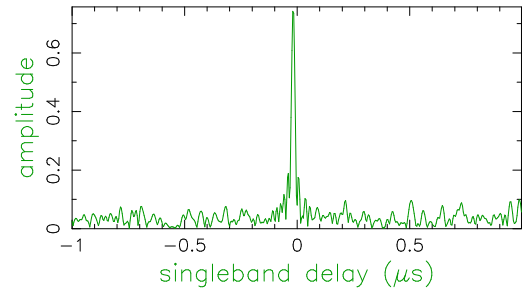
2013+370.1273D9, No0056, XP

ONSALA60 - PICOVEL, fgroup W, pol RL



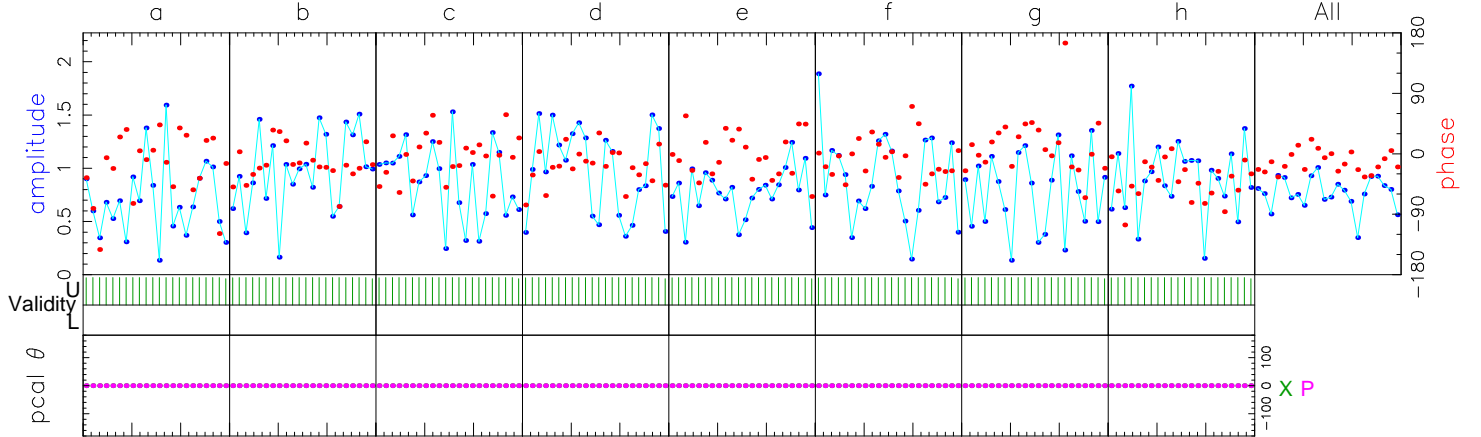
Fringe quality 9

SNR 27.8  
 Int time 179.587  
 Amp 0.757  
 Phase -12.2  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.017741  
 MBD -0.002458  
 Fringe rate (Hz)  
 -0.004800  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130416  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-14.1	-13.1	-5.4	-15.3	-3.6	-10.9	8.3	-37.9	Phase	-12.2
	0.5	0.9	0.7	0.9	0.7	0.8	0.7	0.8	Ampl.	0.8
	253.0	252.2	252.3	252.3	252.9	252.5	252.2	252.2	Sbd box	252.5
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
P	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
X:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
P	1000	1000	1000	1000	1000	1000	1000	1000		
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
P	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

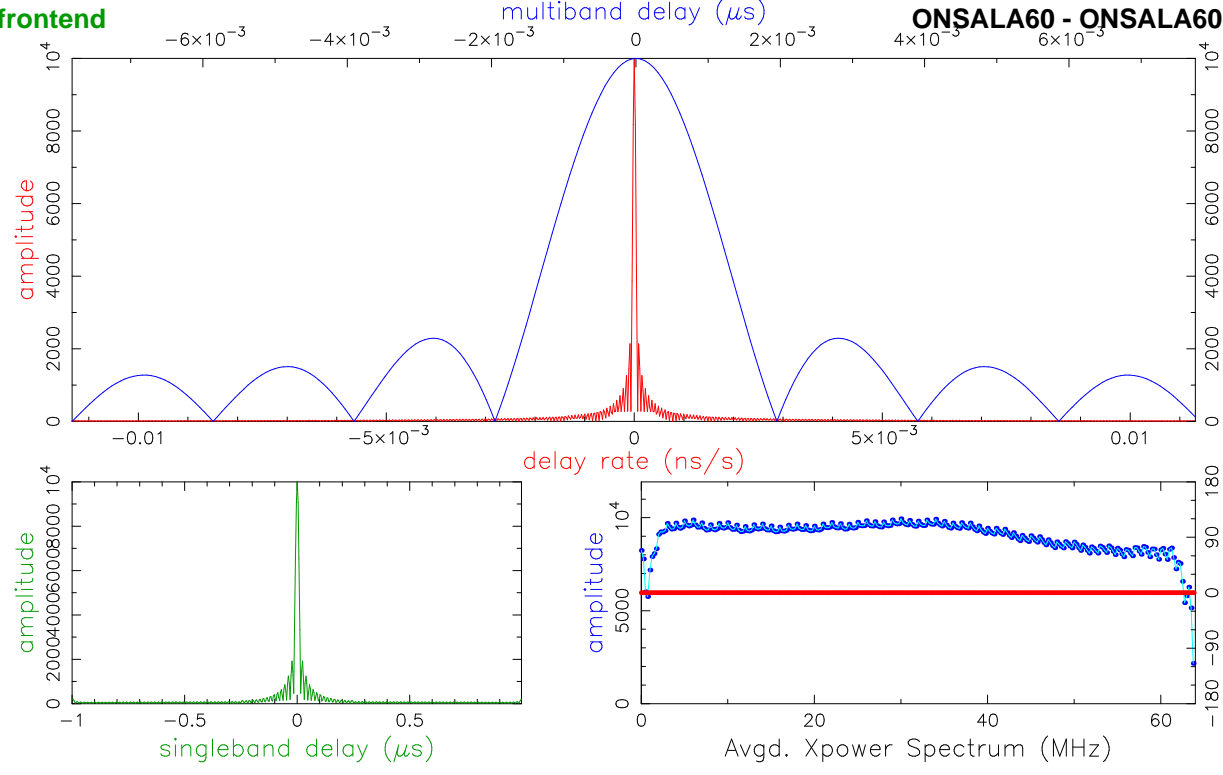
Group delay (usec)(sbd)	-1.86354689350E+03	Apriori delay (usec)	-1.86352881019E+03	Resid mbdelay (usec)	-2.45831E-03	+/-	3.9E-05
Sband delay (usec)	-1.86354655119E+03	Apriori clock (usec)	3.2560566E+01	Resid sbdelay (usec)	-1.77410E-02	+/-	3.1E-04
Phase delay (usec)	-1.86352881058E+03	Apriori clockrate (us/s)	8.8100003E-07	Resid phdelay (usec)	-3.93031E-07	+/-	1.3E-07
Delay rate (us/s)	1.32744363310E-01	Apriori rate (us/s)	1.32744419031E-01	Resid rate (us/s)	-5.57210E-08	+/-	1.3E-09
Total phase (deg)	-267.7	Apriori accel (us/s/s)	2.64528031449E-05	Resid phase (deg)	-12.2	+/-	4.1

ph/seg (deg)	15.6	RMS	9.7	Theor.	15.6	Amplitude	0.757 +/- 0.027	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5	
amp/seg (%)	19.6	15.6	9.7	16.9	15.6	Search (1024X32)	0.707	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000	
ph/frq (deg)	14.2	14.2	5.8	5.8	14.2	Interp.	0.000	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008
amp/frq (%)	15.4	15.4	10.2	10.2	15.4	Inc. seg. avg.	0.762	Sample rate (MSamp/s):	128	dr window (ns/s)	-0.011 0.011	
						Inc. frq. avg.	0.755	Data rate (Mb/s):	2048	ion window (TEC)	0.00 0.00	

X: az 271.1 el 45.2 pa 42.5 P: az 284.9 el 53.0 pa 75.7 u,v (fr/asec) -931.749 3276.282 simultaneous interpolator

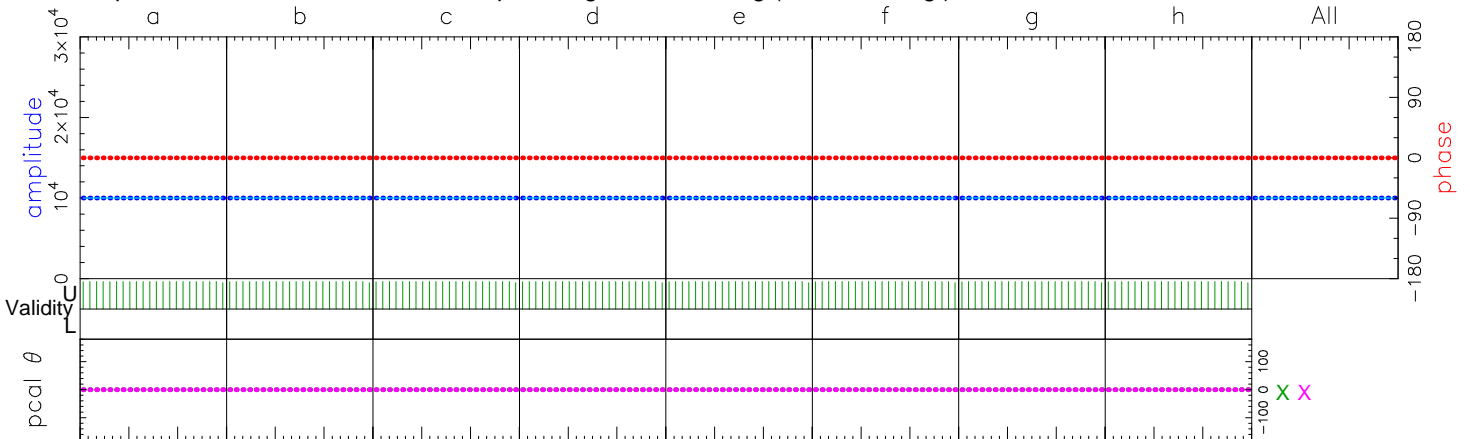
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/XP..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/XP.W.351.1273D9





Fringe quality 9  
 SNR 366662.0  
 Int time 179.778  
 Amp 10000.000  
 Phase -0.0  
 PFD 0.0e+00  
 Delays (us)  
 SBD 0.000000  
 MBD 0.000000  
 Fringe rate (Hz) 0.000000  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130409  
 2019:280:115849  
 RA & Dec (J2000) 20h15m28.729803s +37°10'59.514664"

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



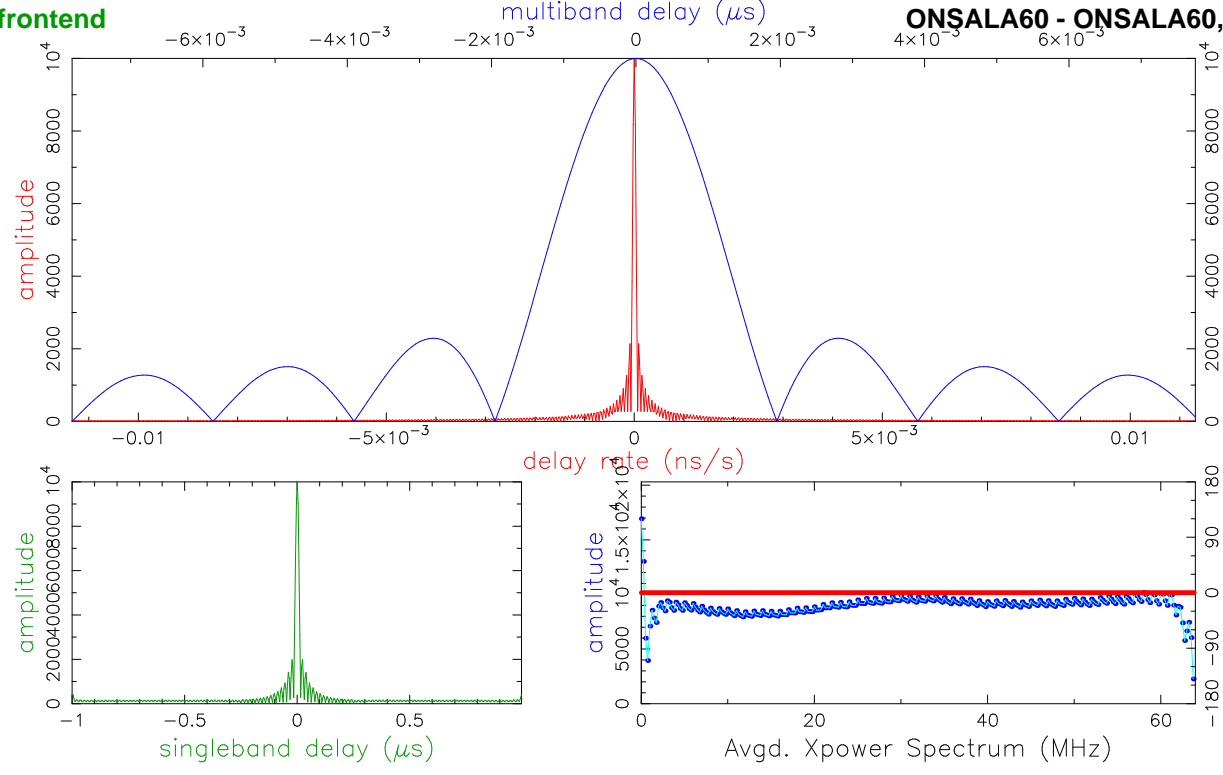
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-0.0	0.0	0.0	0.0	-0.0	0.0	-0.0	0.0	Phase	-0.0
	10000.0	10000.0	10000.0	10000.0	10000.0	10000.0	10000.0	10000.0	Ampl.	10000.0
	257.0	257.0	257.0	257.0	257.0	257.0	257.0	257.0	Sbd box	257.0
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
X:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd)	0.0000000000E+00	Apriori delay (usec)	0.0000000000E+00	Resid mbdelay (usec)	0.00000E+00	+/-	3.0E-09
Sband delay (usec)	0.0000000000E+00	Apriori clock (usec)	0.0000000E+00	Resid sbdelay (usec)	0.00000E+00	+/-	2.3E-08
Phase delay (usec)	-2.58877160028E-21	Apriori clockrate (us/s)	0.0000000E+00	Resid phdelay (usec)	-2.58877E-21	+/-	1.0E-11
Delay rate (us/s)	0.0000000000E+00	Apriori rate (us/s)	0.0000000000E+00	Resid rate (us/s)	0.00000E+00	+/-	9.7E-14
Total phase (deg)	-0.0	Apriori accel (us/s/s)	0.0000000000E+00	Resid phase (deg)	-0.0	+/-	0.0

ph/seg (deg)	0.0	RMS	Theor.	Amplitude	10000.000 +/- 0.027	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5	
amp/seg (%)	0.0	0.0	0.0	Search (1024X32)	10000.000	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000	
ph/frq (deg)	0.0	0.0	0.0	Interp.	0.000	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008
amp/frq (%)	0.0	0.0	0.0	Inc. seg. avg.	10000.000	Sample rate (MSamp/s):	128	dr window (ns/s)	-0.011 0.011	
				Inc. frq. avg.	10000.000	Data rate (Mb/s):	2048	ion window (TEC)	0.00 0.00	
						nlags:	256	t_cohere	infinite	

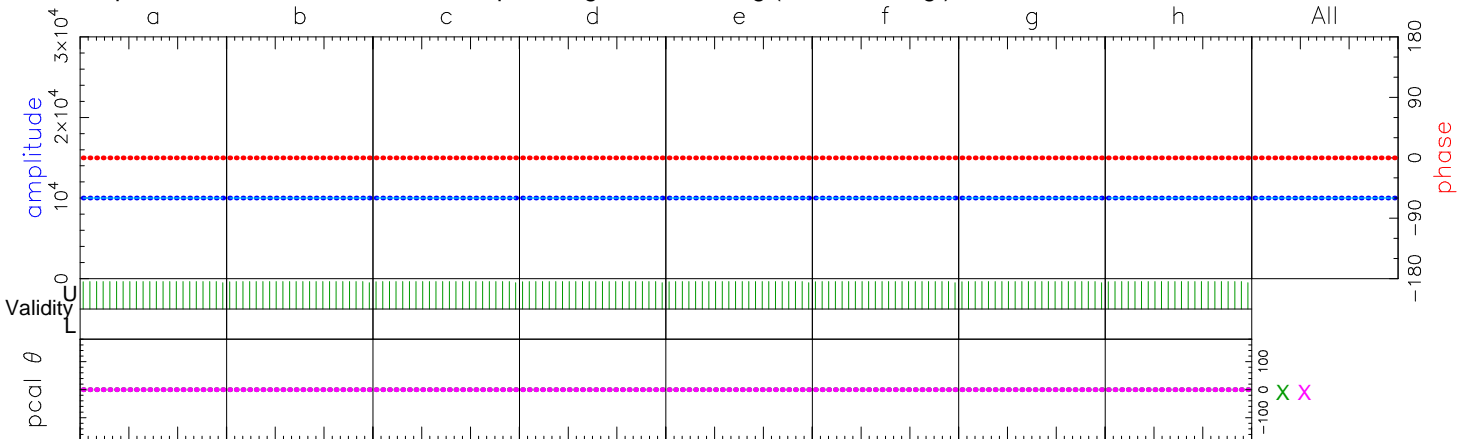
Mk4/DiFX fourfit 3.20 rev 0  
 frontend

2013+370.1273D9, No0056, XX  
 ONSALA60 - ONSALA60, fgroup W, pol RR



Fringe quality 9  
 SNR 366662.0  
 Int time 179.778  
 Amp 10000.000  
 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 2019:278  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130411  
 2019:280:115849  
 RA & Dec (J2000) 20h15m28.729803s +37°10'59.514664"

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

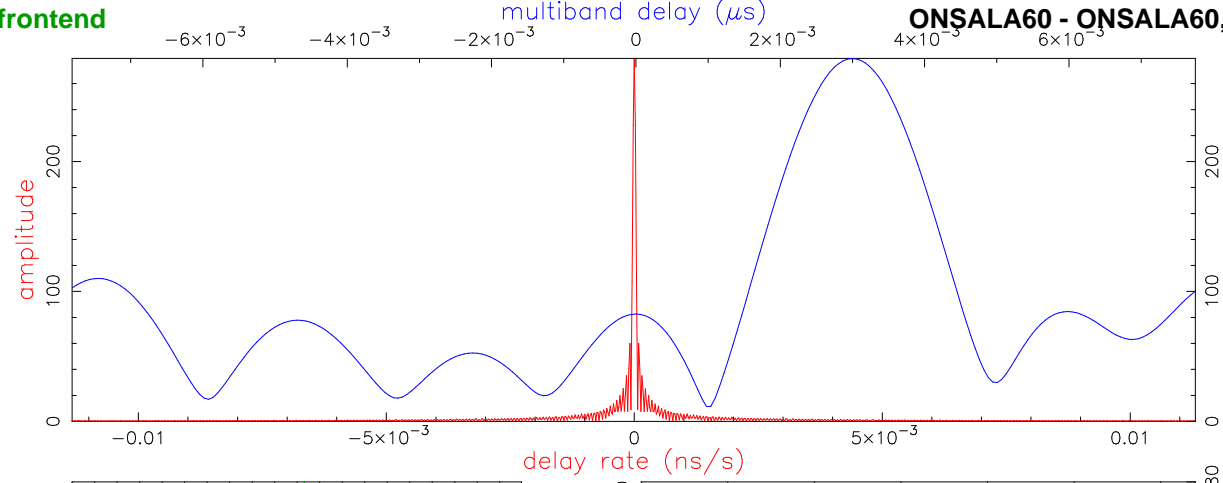


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.0	Phase	0.0
	10000.0	10000.0	10000.0	10000.0	10000.0	10000.0	10000.0	10000.0	Ampl.	10000.0
	257.0	257.0	257.0	257.0	257.0	257.0	257.0	257.0	Sbd box	257.0
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
X:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

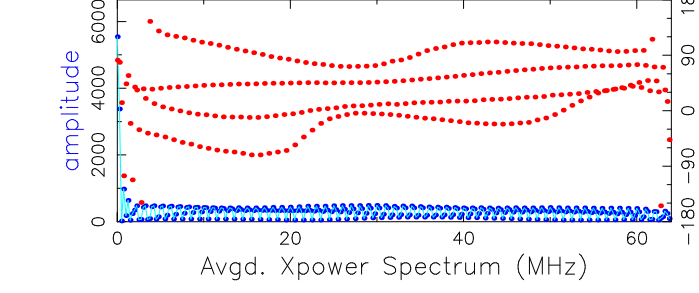
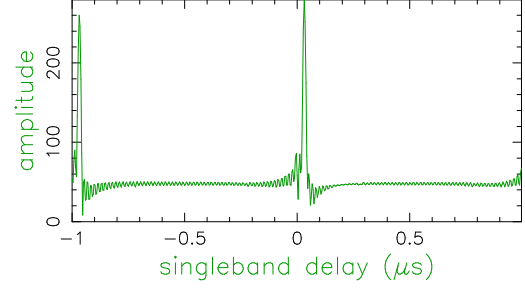
Group delay (usec)(sbd) 0.0000000000E+00 Apriori delay (usec) 0.0000000000E+00 Resid mbdelay (usec) 0.00000E+00 +/- 3.0E-09  
 Sband delay (usec) 0.0000000000E+00 Apriori clock (usec) 0.0000000E+00 Resid sbdelay (usec) 0.00000E+00 +/- 2.3E-08  
 Phase delay (usec) 2.65100666908E-19 Apriori clockrate (us/s) 0.0000000E+00 Resid phdelay (usec) 2.65101E-19 +/- 1.0E-11  
 Delay rate (us/s) 0.0000000000E+00 Apriori rate (us/s) 0.0000000000E+00 Resid rate (us/s) 0.00000E+00 +/- 9.7E-14  
 Total phase (deg) 0.0 Apriori accel (us/s/s) 0.0000000000E+00 Resid phase (deg) 0.0 +/- 0.0

RMS Theor. Amplitude 10000.000 +/- 0.027 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 ph/seg (deg) 0.0 0.0 Search (1024X32) 10000.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 amp/seg (%) 0.0 0.0 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 ph/frq (deg) 0.0 0.0 Inc. seg. avg. 10000.000 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 amp/frq (%) 0.0 0.0 Inc. frq. avg. 10000.000 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00

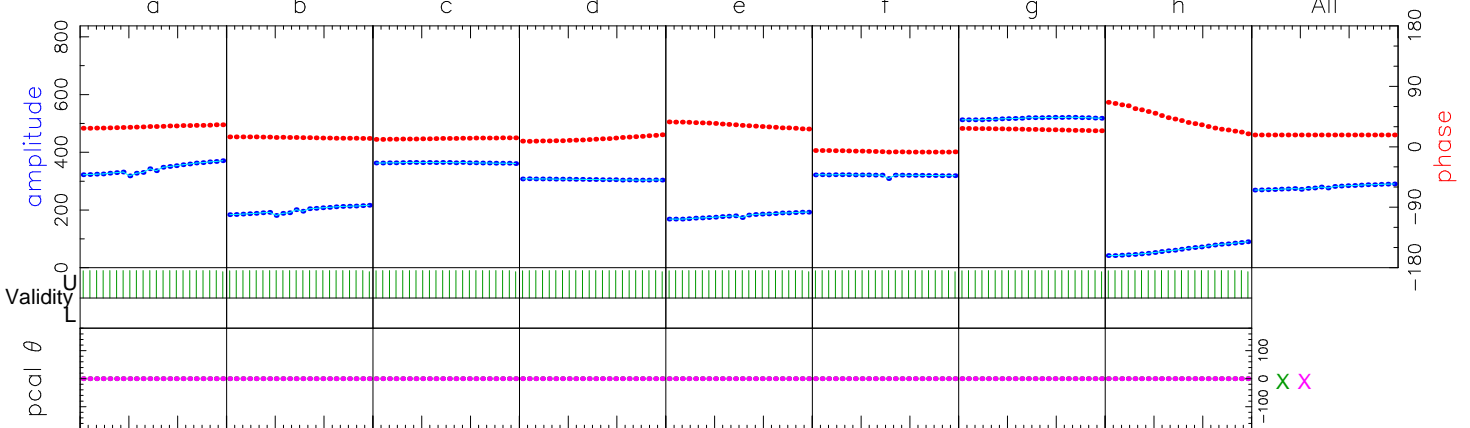
X: az 271.1 el 45.2 pa 42.5 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/XX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/XX.W.325.1273D9



Fringe quality 6  
SNR 10245.2  
Int time 179.778  
Amp 279.419  
Phase 17.6  
PFD 0.0e+00  
Delays (us)  
SBD 0.031485  
MBD 0.003017  
Fringe rate (Hz)  
-0.000010  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512  
Exp. c192c  
Yr:day 16383  
Start 224000.00  
Stop 224300.23  
FRT 224130.00  
Corr/FF/build  
2020:070:045745  
2020:071:130413  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"



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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
30.1	13.6	12.3	11.8	32.0	-7.0	25.7	37.9	Phase	17.6	
342.5	199.2	363.6	305.3	179.8	320.3	517.6	61.8	Ampl.	286.3	
265.9	9.8	265.5	265.5	9.0	265.7	9.0	11.6	Sbd box	265.1	
U/L 352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used		
X 1000	1000	1000	1000	1000	1000	1000	1000	PC freqs		
X 1000	1000	1000	1000	1000	1000	1000	1000	PC freqs		
X:X 0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase		
X:X 0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC		
X 1000	1000	1000	1000	1000	1000	1000	1000	PC amp		
X 1000	1000	1000	1000	1000	1000	1000	1000			
X W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids		
X W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks		
								Tracks		
Group delay (usec)(sbd)	3.42673437500E-02		Apriori delay (usec)	0.0000000000E+00	Resid mbdelay (usec)	3.01734E-03	+/-	1.1E-07		
Sband delay (usec)	3.14847500000E-02		Apriori clock (usec)	0.0000000E+00	Resid sbdelay (usec)	3.14847E-02	+/-	8.4E-07		
Phase delay (usec)	5.69013046739E-07		Apriori clockrate (us/s)	0.0000000E+00	Resid phdelay (usec)	5.69013E-07	+/-	3.6E-10		
Delay rate (us/s)	-1.17620564851E-10		Apriori rate (us/s)	0.0000000000E+00	Resid rate (us/s)	-1.17621E-10	+/-	3.5E-12		
Total phase (deg)		17.6	Apriori accel (us/s/s)	0.0000000000E+00	Resid phase (deg)	17.6	+/-	0.0		

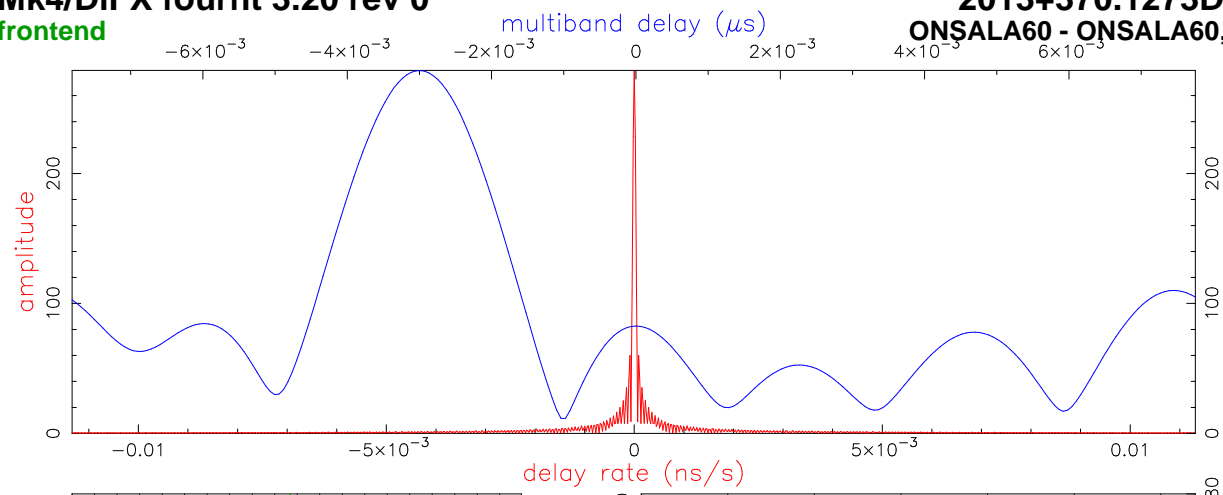
ph/seg (deg) 0.0 0.0 RMS Theor. Amplitude 279.419 +/- 0.027 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 2.6 0.0 Search (1024X32) 278.806 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 16.0 0.0 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 46.3 0.0 Inc. seg. avg. 279.301 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
X: az 271.1 el 45.2 pa 42.5 X: az 271.1 el 45.2 pa 42.5 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/No0056/XX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/XX.W.338.1273D9 simultaneous interpolator

Mk4/DiFX fourfit 3.20 rev 0

frontend

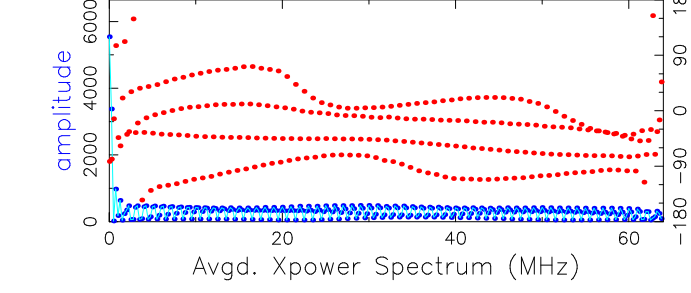
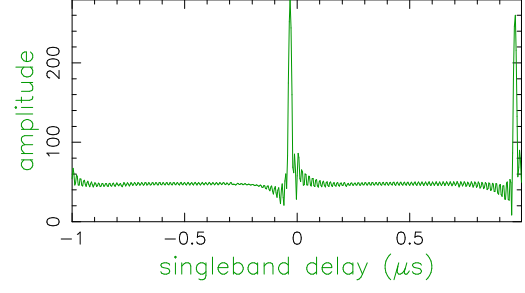
2013+370.1273D9, No0056, XX

ONSALA60 - ONSALA60, fgroup W, pol RL



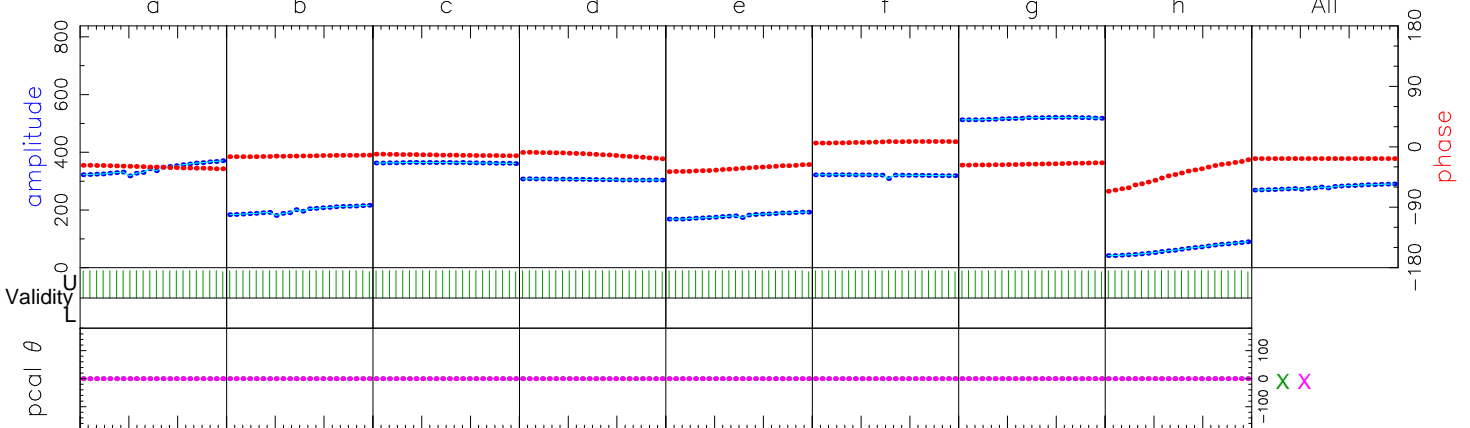
Fringe quality 6

SNR 10245.2  
 Int time 179.778  
 Amp 279.419  
 Phase -17.6  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.031485  
 MBD -0.003017  
 Fringe rate (Hz)  
 0.000010  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130415  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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

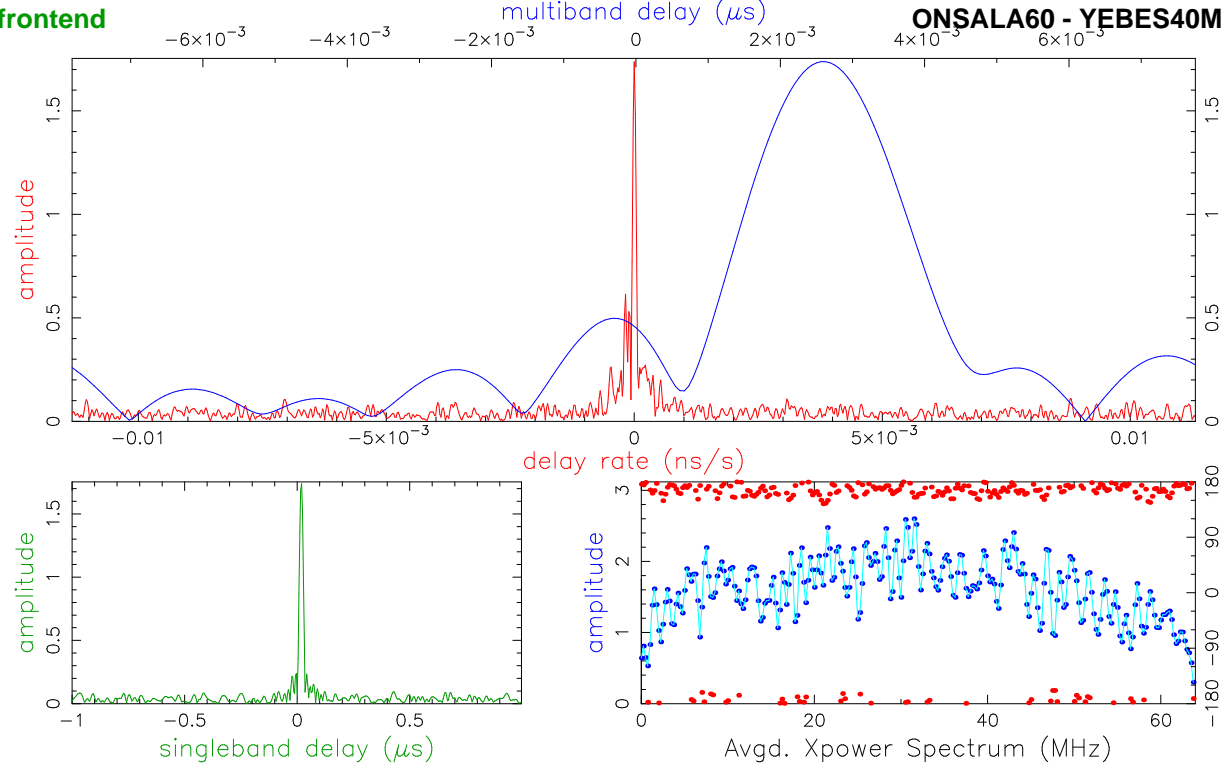


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-30.1	-13.6	-12.3	-11.8	-32.0	7.0	-25.7	-37.9	Phase	-17.6
	342.5	199.2	363.6	305.3	179.8	320.3	517.6	61.8	Ampl.	286.3
	248.1	504.2	248.5	248.5	505.0	248.3	505.0	502.4	Sbd box	248.9
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
X:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd) -3.42673437500E-02 Apriori delay (usec) 0.00000000000E+00 Resid mbdelay (usec) -3.01734E-03 +/- 1.1E-07  
 Sband delay (usec) -3.14847500000E-02 Apriori clock (usec) 0.0000000E+00 Resid sbdelay (usec) -3.14847E-02 +/- 8.4E-07  
 Phase delay (usec) -5.69013046793E-07 Apriori clockrate (us/s) 0.0000000E+00 Resid phdelay (usec) -5.69013E-07 +/- 3.6E-10  
 Delay rate (us/s) 1.17620564851E-10 Apriori rate (us/s) 0.00000000000E+00 Resid rate (us/s) 1.17621E-10 +/- 3.5E-12  
 Total phase (deg) -17.6 Apriori accel (us/s/s) 0.00000000000E+00 Resid phase (deg) -17.6 +/- 0.0

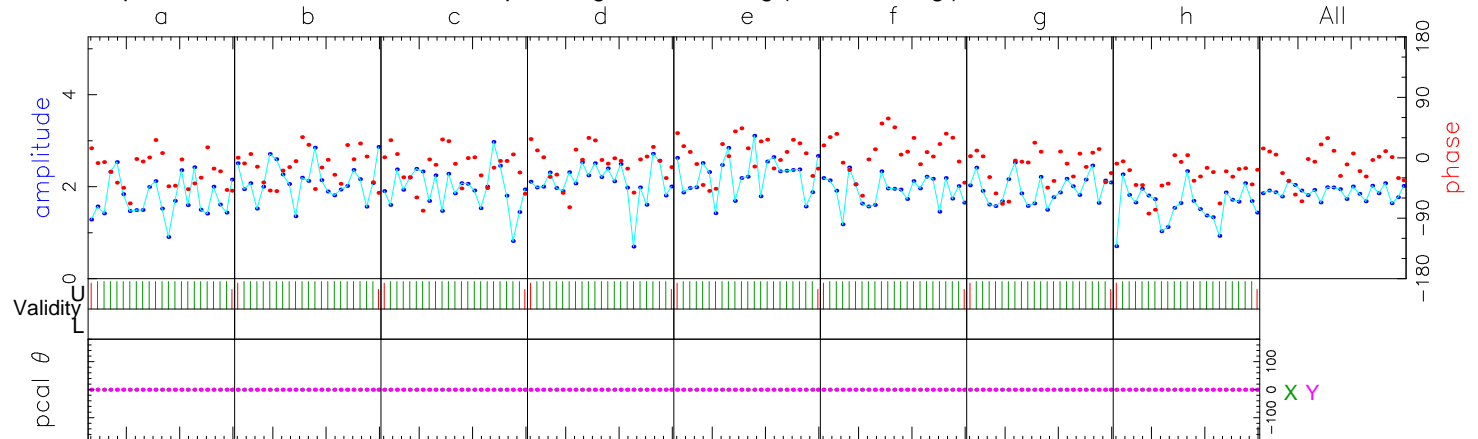
RMS Theor. Amplitude 279.419 +/- 0.027 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 ph/seg (deg) 0.0 0.0 Search (1024X32) 278.806 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 amp/seg (%) 2.6 0.0 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 ph/frq (deg) 16.0 0.0 Inc. seg. avg. 279.301 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 amp/frq (%) 46.3 0.0 Inc. frq. avg. 286.253 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00

X: az 271.1 el 45.2 pa 42.5 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/XX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/XX.W.348.1273D9



Fringe quality 6  
SNR 61.1  
Int time 162.301  
Amp 1.753  
Phase -9.5  
PFD 0.0e+00  
Delays (us)  
SBD 0.018244  
MBD 0.002560  
Fringe rate (Hz)  
-0.000355  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512  
Exp. c192c  
Yr:day 16383  
Start 224016.90  
Stop 224259.71  
FRT 224130.00  
Corr/FF/build  
2020:070:045745  
2020:071:130410  
2019:280:115849  
RA & Dec (J2000)  
20h15m28.729803s  
+37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-19.9	-15.0	-15.6	-5.7	3.9	11.7	-13.0	-27.0	Phase	-9.5
	1.6	1.9	1.8	1.9	2.0	1.7	1.8	1.5	Ampl.	1.8
	261.5	261.9	261.3	261.8	262.1	261.4	261.5	261.0	Sbd box	261.7
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
X:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	-1.98808937432E+03		Apriori delay (usec)		-1.98810755914E+03		Resid mbdelay (usec)		2.55981E-03	+/- 1.8E-05
Sband delay (usec)	-1.98808931464E+03		Apriori clock (usec)		2.2730080E+01		Resid sbdelay (usec)		1.82445E-02	+/- 1.4E-04
Phase delay (usec)	-1.98810755944E+03		Apriori clockrate (us/s)		3.0800002E-07		Resid phdelay (usec)		-3.07162E-07	+/- 6.0E-08
Delay rate (us/s)	1.01723510501E-01		Apriori rate (us/s)		1.01723514625E-01		Resid rate (us/s)		-4.12381E-09	+/- 6.4E-10
Total phase (deg)			Apriori accel (us/s/s)		2.38628903624E-05		Resid phase (deg)		-9.5	+/- 1.9

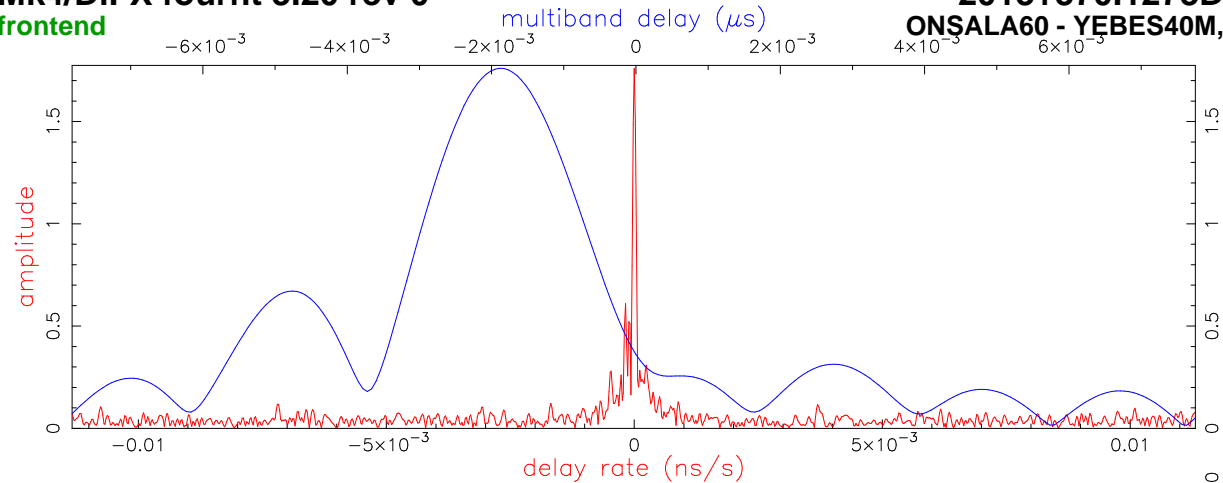
ph/seg (deg) 23.3 4.5 Search (1024X32) 1.713 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 10.8 7.9 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 13.8 2.7 Inc. seg. avg. 1.885 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 9.8 4.6 Inc. frq. avg. 1.772 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
X: az 271.1 el 45.2 pa 42.5 Y: az 280.5 el 53.6 pa 69.7 u,v (fr/asec) -711.168 2789.764 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/XY..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/XY.W.321.1273D9

Mk4/DiFX fourfit 3.20 rev 0

frontend

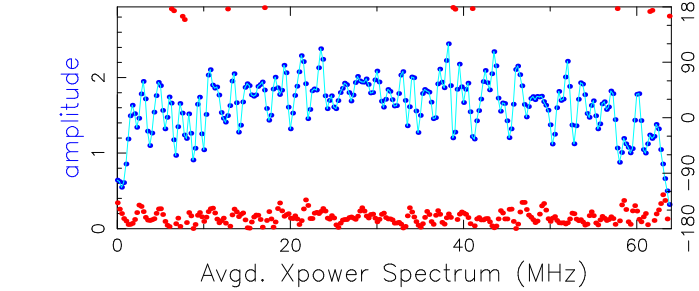
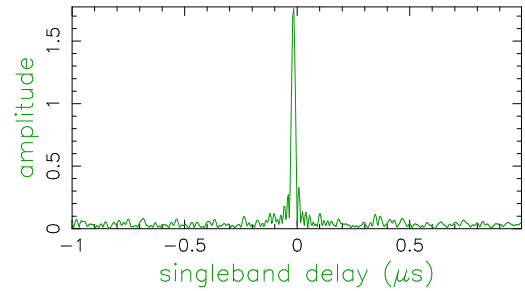
2013+370.1273D9, No0056, XY

ONŞALA60 - YEBES40M, fgroup W, pol RR



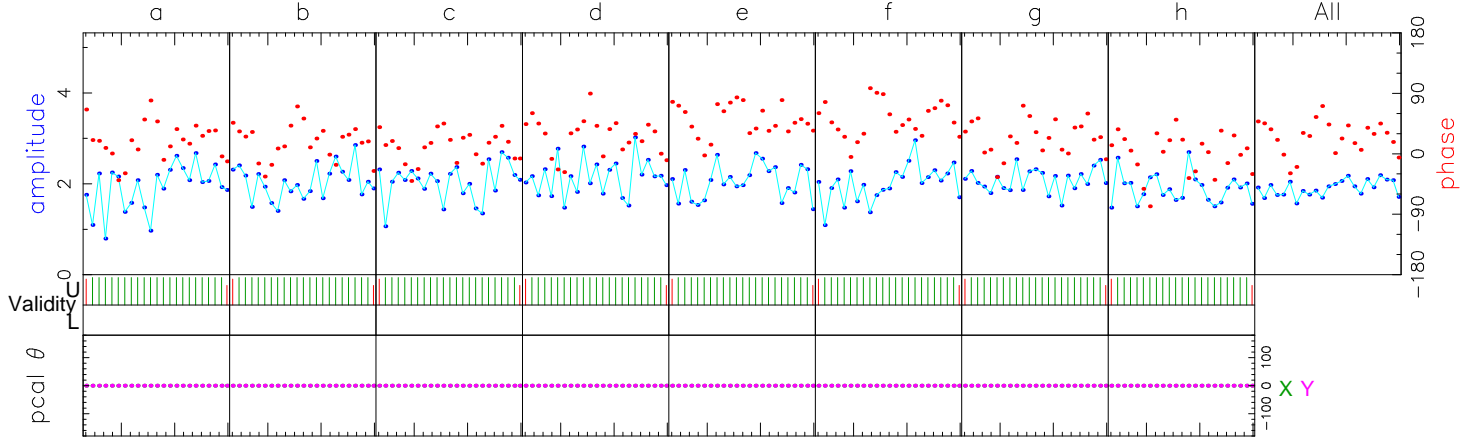
Fringe quality 6

SNR 61.8  
 Int time 162.301  
 Amp 1.774  
 Phase 25.9  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.016830  
 MBD -0.001911  
 Fringe rate (Hz)  
 -0.000401  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



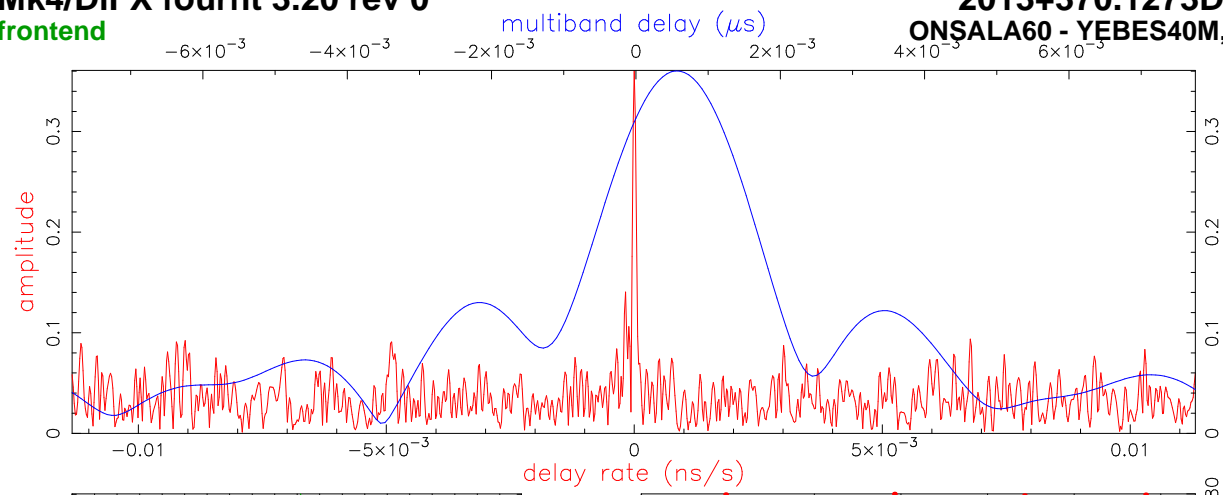
Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224016.90  
 Stop 224259.71  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130412  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0		
X	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
X:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
X:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
X	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)	-1.98812509473E+03									
Sband delay (usec)	-1.98812438939E+03									
Phase delay (usec)	-1.98810755830E+03									
Delay rate (us/s)	1.01723509967E-01									
Total phase (deg)			-25.9							
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 θ										
RMS	23.7	4.4								
Theor.	4.4									
Amplitude	1.774 +/- 0.029									
Search (1024X32)	1.743									
Interp.	0.000									
Inc. seg. avg.	1.905									
Inc. frq. avg.	1.830									
PCal mode: MANUAL, MANUAL										
PCal period (AP's) 5, 5										
sb window (us)	-1.000	1.000								
mb window (us)	-0.008	0.008								
dr window (ns/s)	-0.011	0.011								
ion window (TEC)	0.00	0.00								
simultaneous interpolator										

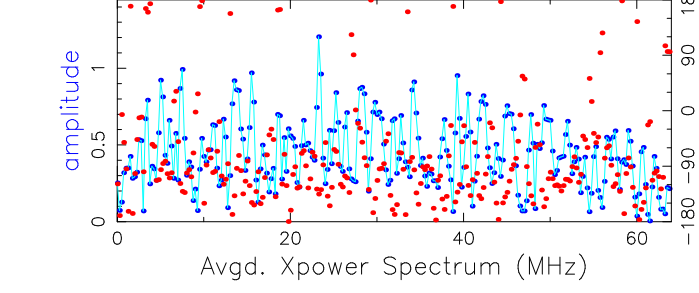
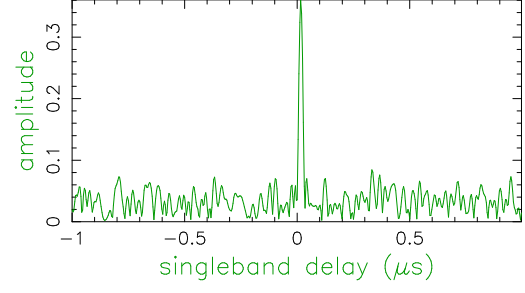
X: az 271.1 el 45.2 pa 42.5 Y: az 280.5 el 53.6 pa 69.7 u,v (fr/asec) -711.168 2789.764 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/XY..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/XY.W.332.1273D9



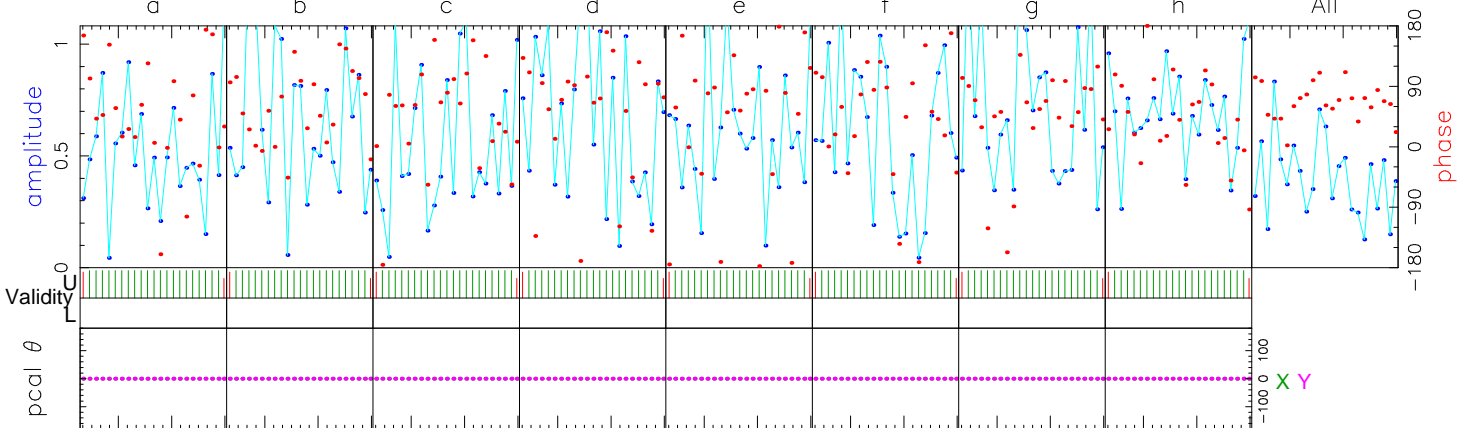
Fringe quality 9

SNR 12.6  
 Int time 162.301  
 Amp 0.361  
 Phase 68.3  
 PFD 8.2e-28  
 Delays (us)  
 SBD 0.016103  
 MBD 0.000576  
 Fringe rate (Hz)  
 -0.000239  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224016.90  
 Stop 224259.71  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130414  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	48.4	60.4	60.5	99.4	98.6	61.7	73.5	41.4	Phase	68.3
	0.3	0.4	0.3	0.4	0.3	0.4	0.5	0.4	Ampl.	0.4
	261.7	260.7	261.6	261.4	261.0	261.0	261.0	260.7	Sbd box	261.1
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0	APs used	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
X:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-1.98809135864E+03			Apriori delay (usec)	-1.98810755914E+03			Resid mbdelay (usec)	5.75500E-04	+/- 8.6E-05
Sband delay (usec)	-1.98809145614E+03			Apriori clock (usec)	2.2730080E+01			Resid sbdelay (usec)	1.61030E-02	+/- 6.9E-04
Phase delay (usec)	-1.98810755693E+03			Apriori clockrate (us/s)	3.0800002E-07			Resid phdelay (usec)	2.20279E-06	+/- 2.9E-07
Delay rate (us/s)	1.01723511846E-01			Apriori rate (us/s)	1.01723514625E-01			Resid rate (us/s)	-2.77896E-09	+/- 3.1E-09
Total phase (deg)		16.5		Apriori accel (us/s/s)	2.38628903624E-05			Resid phase (deg)	68.3	+/- 9.1

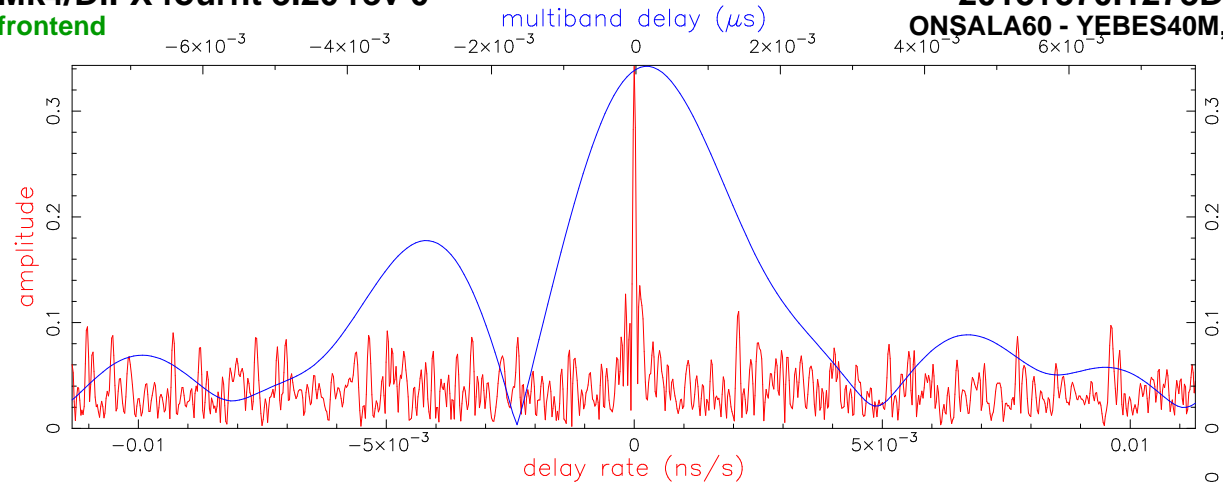
ph/seg (deg) 26.6 21.9 Search (1024X32) 0.358 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 50.4 38.2 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 23.1 12.9 Inc. seg. avg. 0.378 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 18.2 22.5 Inc. frq. avg. 0.373 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 X: az 271.1 el 45.2 pa 42.5 Y: az 280.5 el 53.6 pa 69.7 u,v (fr/asec) -711.168 2789.764 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/XY..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/XY.W.342.1273D9

# Mk4/DiFX fourfit 3.20 rev 0

frontend

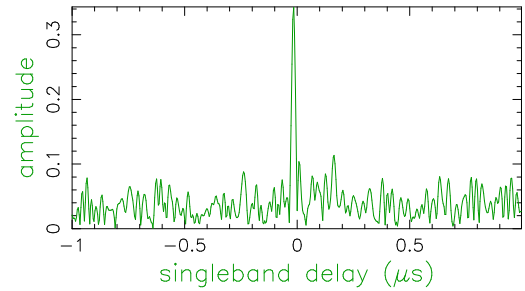
## 2013+370.1273D9, No0056, XY

ONŞALA60 - YEŞES40M, fgroup W, pol RL

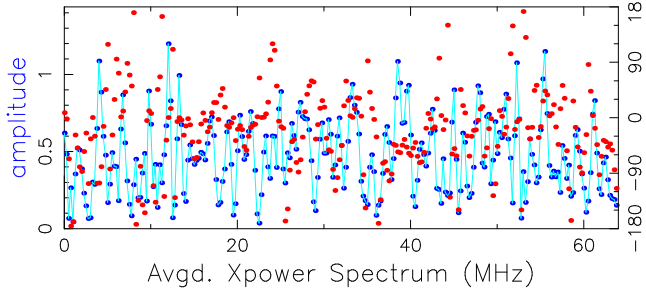


Fringe quality 9

SNR 12.0  
 Int time 162.301  
 Amp 0.343  
 Phase 150.7  
 PFD 1.5e-24  
 Delays (us)  
 SBD -0.016314  
 MBD 0.000123  
 Fringe rate (Hz)  
 -0.000775  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

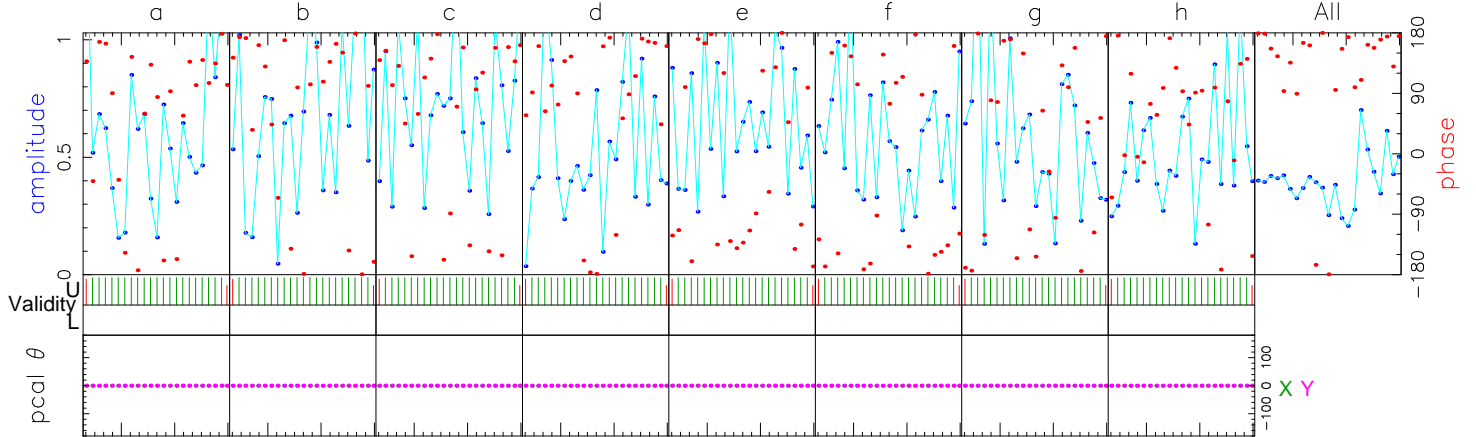


delay rate (ns/s)



Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224016.90  
 Stop 224259.71  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130416  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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

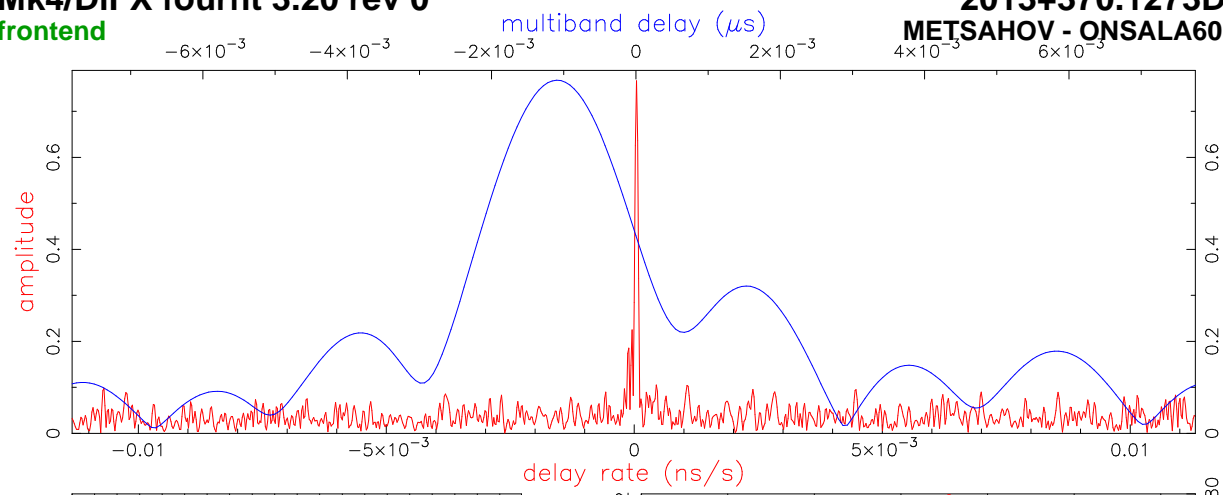


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	318/0	318/0	318/0	318/0	318/0	318/0	318/0	318/0		
X	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
X:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
X:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
X	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	-1.98812306120E+03				-1.98810755914E+03				1.22938E-04	+/- 9.1E-05
Sband delay (usec)	-1.98812387264E+03				2.2730080E+01				-1.63135E-02	+/- 7.2E-04
Phase delay (usec)	-1.98810755428E+03				3.0800002E-07				4.86100E-06	+/- 3.1E-07
Delay rate (us/s)	1.01723505630E-01				1.01723514625E-01				-8.99443E-09	+/- 3.3E-09
Total phase (deg)			98.9		2.38628903624E-05				150.7	+/- 9.6
	RMS	Theor.	Amplitude	0.343 +/- 0.029	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5				
ph/seg (deg)	31.8	23.0	Search (1024X32)	0.329	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000	1.000		
amp/seg (%)	36.0	40.1	Interp.	0.000	Bits/sample: 2x2	SampCntNorm: enabled	mb window (us)	-0.008	0.008	
ph/frq (deg)	35.0	13.5	Inc. seg. avg.	0.370	Sample rate(MISamp/s): 128		dr window (ns/s)	-0.011	0.011	
amp/frq (%)	25.3	23.6	Inc. frq. avg.	0.377	Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00	0.00

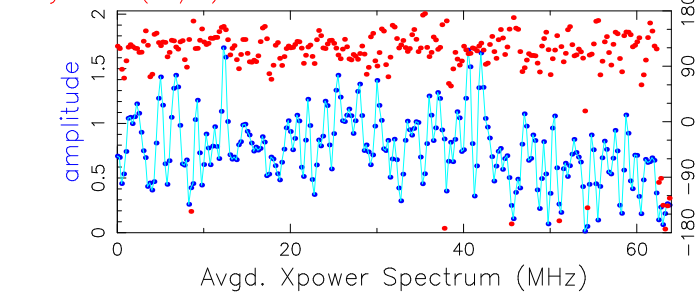
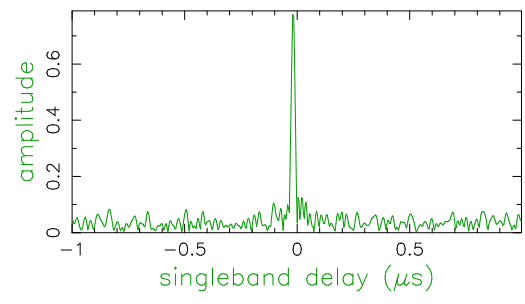
X: az 271.1 el 45.2 pa 42.5 Y: az 280.5 el 53.6 pa 69.7 u,v (fr/asec) -711.168 2789.764 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/XY..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/XY.W.353.1273D9

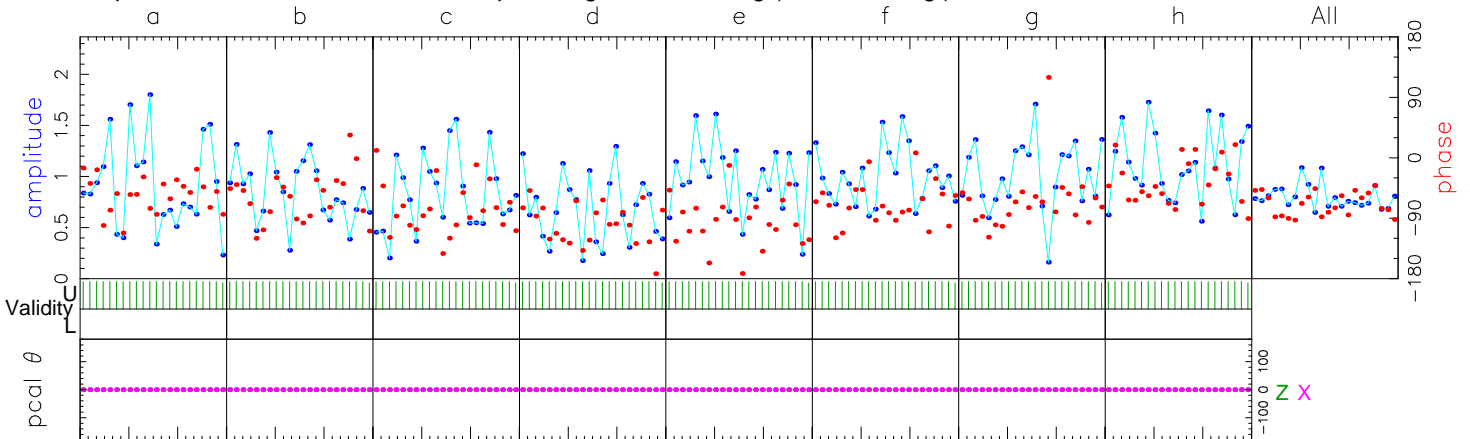




Fringe quality 8  
 SNR 28.9  
 Int time 179.666  
 Amp 0.789  
 Phase -69.3  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.017856  
 MBD -0.001152  
 Fringe rate (Hz) 0.004149  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130411  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"



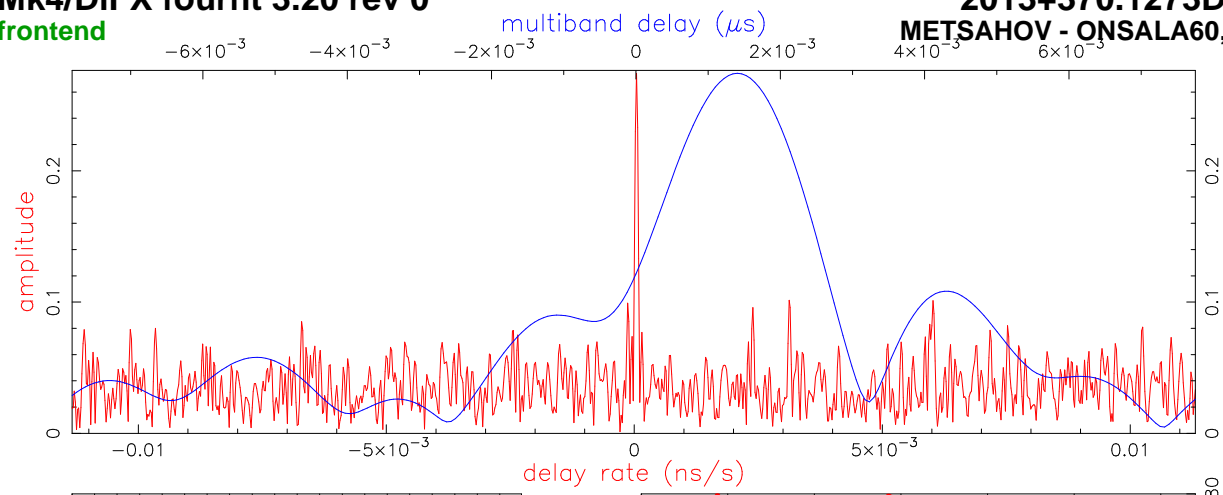
Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-54.8	-61.4	-77.9	-98.3	-94.9	-71.4	-72.1	-35.3	Phase	-69.3
	0.8	0.7	0.7	0.6	0.8	0.9	0.9	0.9	Ampl.	0.8
	252.4	252.3	252.4	252.1	253.0	252.4	252.9	252.7	Sbd box	252.4
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
Z	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Z:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
Z:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
Z	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
X	1000	1000	1000	1000	1000	1000	1000	1000		
Z	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-1.73984582810E+03		Apriori delay (usec)		-1.73982905073E+03		Resid mbdelay (usec)		-1.15237E-03	+/- 3.8E-05
Sband delay (usec)	-1.73984690648E+03		Apriori clock (usec)		-3.2228081E+01		Resid sbdelay (usec)		-1.78558E-02	+/- 3.0E-04
Phase delay (usec)	-1.73982905296E+03		Apriori clockrate (us/s)		-5.1170721E-07		Resid phdelay (usec)		-2.23356E-06	+/- 1.3E-07
Delay rate (us/s)	-2.10604438009E-03		Apriori rate (us/s)		-2.10609254359E-03		Resid rate (us/s)		4.81635E-08	+/- 1.2E-09
Total phase (deg)			Apriori accel (us/s/s)		1.08280635602E-05		Resid phase (deg)		-69.3	+/- 4.0

ph/seg (deg) 17.1 9.3 Search (1024X32) 0.758 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 14.7 16.2 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 22.4 5.6 Inc. seg. avg. 0.791 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 14.6 9.8 Inc. frq. avg. 0.808 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 Z: az 278.7 el 39.0 pa 38.1 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) 23.694 827.116 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/ZX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/ZX.W.327.1273D9

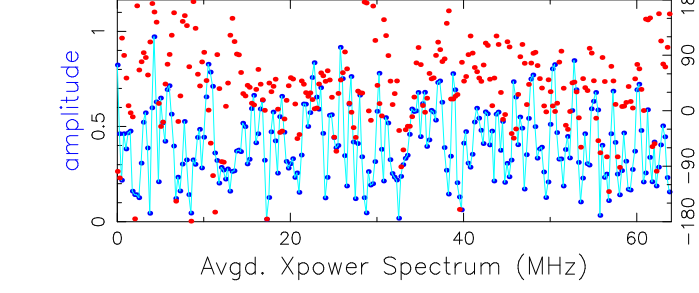
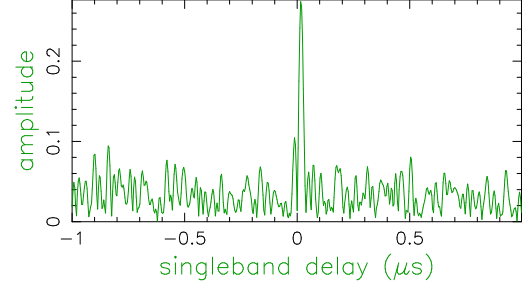




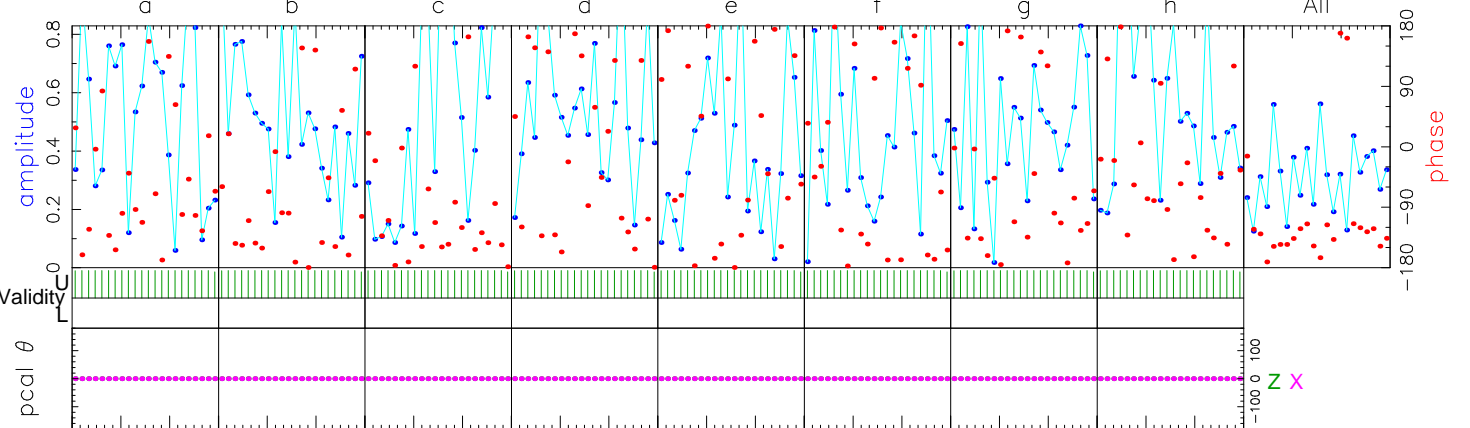
Fringe quality 9

SNR 10.1  
 Int time 179.666  
 Amp 0.276  
 Phase -136.7  
 PFD 8.3e-16  
 Delays (us)  
 SBD 0.016948  
 MBD 0.001429  
 Fringe rate (Hz) 0.004126  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512

Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130415  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

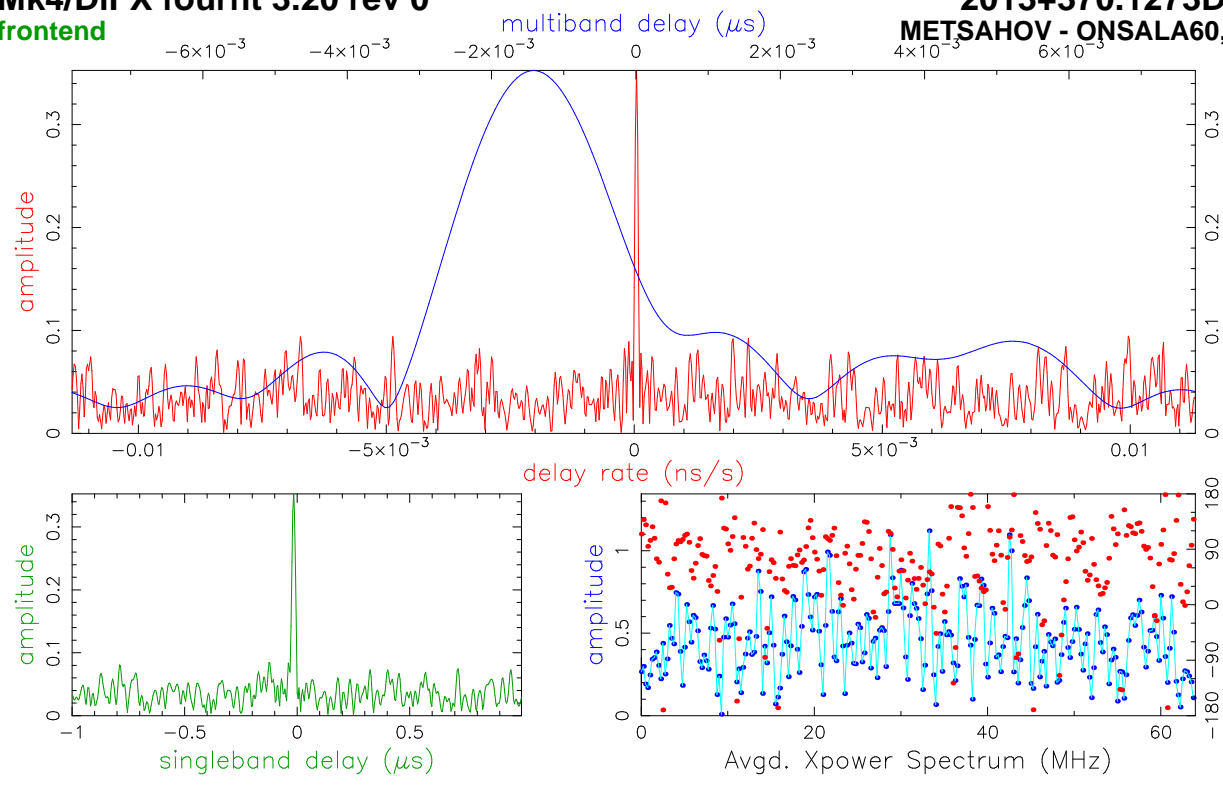


Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



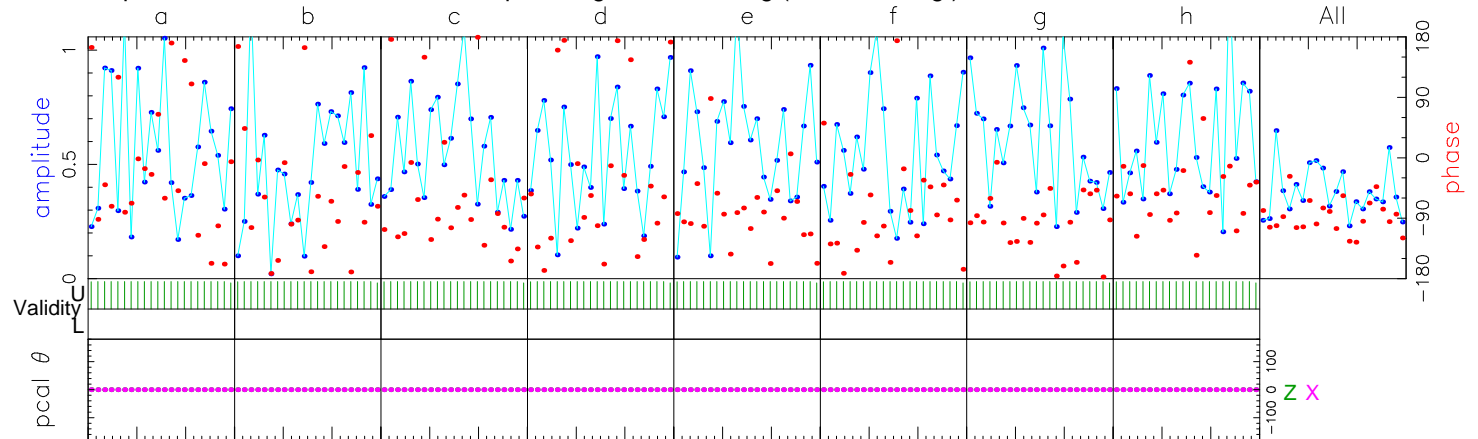
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-117.1	-131.7	-133.3	-158.6	-157.6	-168.8	-134.4	-104.3	Phase	-136.7
	0.3	0.3	0.4	0.2	0.2	0.3	0.3	0.3	Ampl.	0.3
	261.5	260.8	261.7	506.9	302.7	261.6	262.8	299.3	Sbd box	261.3
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
Z	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Z:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
Z:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
Z	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
X	1000	1000	1000	1000	1000	1000	1000	1000		
Z	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-1.73981199688E+03		Apriori delay (usec)		-1.73982905073E+03		Resid mbdelay (usec)		1.42885E-03	+/- 1.1E-04
Sband delay (usec)	-1.73981210248E+03		Apriori clock (usec)		-3.2228081E+01		Resid sbdelay (usec)		1.69482E-02	+/- 8.5E-04
Phase delay (usec)	-1.73982905514E+03		Apriori clockrate (us/s)		-5.1170721E-07		Resid phdelay (usec)		-4.40955E-06	+/- 3.6E-07
Delay rate (us/s)	-2.10604464651E-03		Apriori rate (us/s)		-2.10609254359E-03		Resid rate (us/s)		4.78971E-08	+/- 3.5E-09
Total phase (deg)			Apriori accel (us/s/s)		1.08280635602E-05		Resid phase (deg)		-136.7	+/- 11.3

ph/seg (deg) 34.9 26.5 Search (1024X32) 0.272 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 45.1 46.3 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 23.9 16.0 Inc. seg. avg. 0.282 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 23.0 27.9 Inc. frq. avg. 0.280 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 Z: az 278.7 el 39.0 pa 38.1 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) 23.694 827.116 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/ZX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/ZX.W.349.1273D9



Fringe quality 9  
 SNR 12.9  
 Int time 179.666  
 Amp 0.353  
 Phase -86.5  
 PFD 8.7e-30  
 Delays (us)  
 SBD -0.015810  
 MBD -0.001423  
 Fringe rate (Hz) 0.004056  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c192c  
 Exper # 16383  
 Yr:day 2019:278  
 Start 224000.00  
 Stop 224300.23  
 FRT 224130.00  
 Corr/FF/build  
 2020:070:045745  
 2020:071:130417  
 2019:280:115849  
 RA & Dec (J2000)  
 20h15m28.729803s  
 +37°10'59.514664"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-55.8	-84.3	-90.2	-121.5	-87.8	-95.9	-96.6	-57.7	Phase	-86.5
	0.3	0.3	0.4	0.3	0.5	0.4	0.5	0.4	Ampl.	0.4
	251.5	252.4	253.9	252.9	253.1	251.4	253.0	253.3	Sbd box	253.0
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
Z	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Z:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
Z:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
Z	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
X	1000	1000	1000	1000	1000	1000	1000	1000		
Z	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	-1.73984609891E+03		Apriori delay (usec)		-1.73982905073E+03		Resid mbdelay (usec)		-1.42318E-03	+/- 8.4E-05
Sband delay (usec)	-1.73984486048E+03		Apriori clock (usec)		-3.2228081E+01		Resid sbdelay (usec)		-1.58098E-02	+/- 6.7E-04
Phase delay (usec)	-1.73982905352E+03		Apriori clockrate (us/s)		-5.1170721E-07		Resid phdelay (usec)		-2.78930E-06	+/- 2.9E-07
Delay rate (us/s)	-2.10604545285E-03		Apriori rate (us/s)		-2.10609254359E-03		Resid rate (us/s)		4.70907E-08	+/- 2.7E-09
Total phase (deg)			Apriori accel (us/s/s)		1.08280635602E-05		Resid phase (deg)		-86.5	+/- 8.9

ph/seg (deg) 24.5 20.8 Amplitude 0.353 +/- 0.027 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 31.6 36.3 Search (1024X32) 0.351 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 23.1 12.5 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 23.4 21.9 Inc. seg. avg. 0.359 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 Z: az 278.7 el 39.0 pa 38.1 X: az 271.1 el 45.2 pa 42.5 u,v (fr/asec) 23.694 827.116 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00  
 Control file: cf\_1234\_gmva Input file: /Exps/c192c/v1\_CygA2/1234/No0056/ZX..1273D9 Output file: /Exps/c192c/v1\_CygA2/1234/No0056/ZX.W.359.1273D9 simultaneous interpolator