

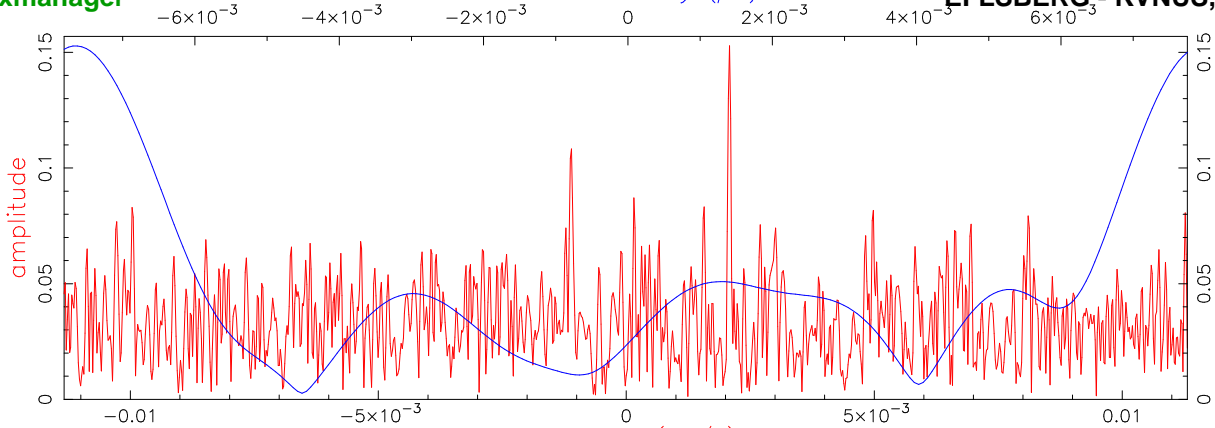
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

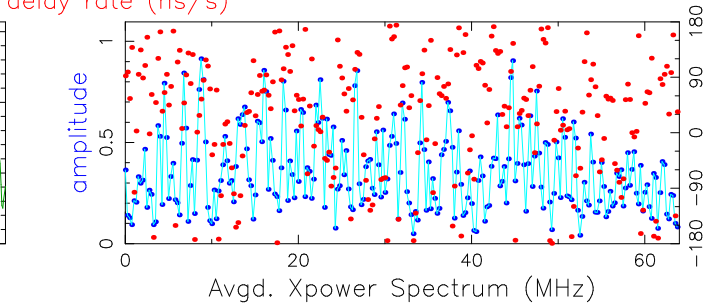
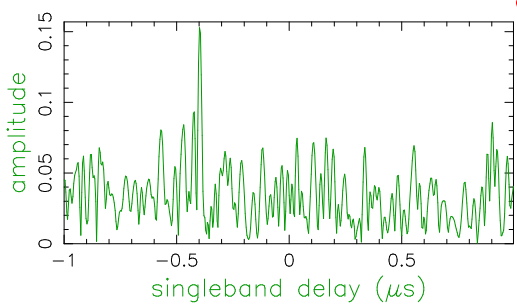
0102+584.1HRBHI, No0113, Bu

EFLSBERG<sub>3</sub>- KVNUS, fgroup W, pol RR

multiband delay ( $\mu$ s)

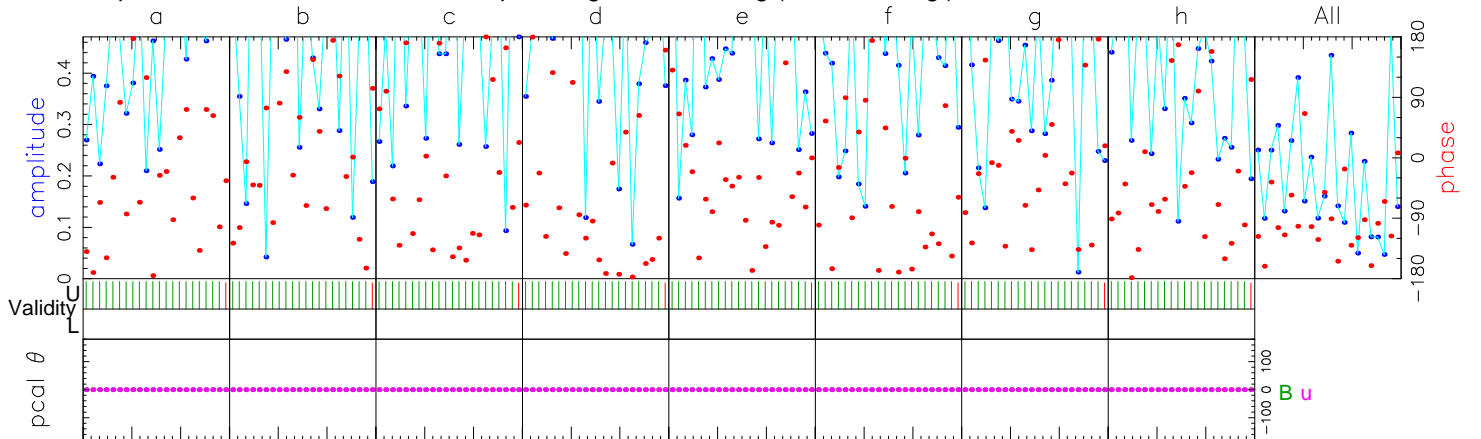


Fringe quality 0  
 SNR 5.7  
 Int time 179.778  
 Amp 0.157  
 Phase -97.3  
 PFD 8.2e-01  
 Delays (us)  
 SBD -0.397032  
 MBD -0.007631  
 Fringe rate (Hz) 0.180242  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134738  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"



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
	-64.3	-71.6	-120.6	-124.5	-78.0	-135.1	-63.3	-87.0	Phase	-97.3
	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.2	Ampl.	0.2
	37.0	149.6	154.2	137.4	248.9	286.5	183.0	395.8	Sbd box	155.4
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	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
B:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
B:u	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	
u	1000	1000	1000	1000	1000	1000	1000	1000		
B	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-1.85307353460E+03		Apriori delay (usec)	-1.85267527868E+03	Resid mbdelay (usec)	-7.63093E-03	+/-	1.9E-04		
Sband delay (usec)	-1.85307231068E+03		Apriori clock (usec)	7.6005459E+00	Resid sbdelay (usec)	-3.97032E-01	+/-	1.5E-03		
Phase delay (usec)	-1.85267528181E+03		Apriori clockrate (us/s)	-5.9999998E-07	Resid phdelay (usec)	-3.13636E-06	+/-	6.5E-07		
Delay rate (us/s)	-9.57576206526E-01		Apriori rate (us/s)	-9.57578298952E-01	Resid rate (us/s)	2.09243E-06	+/-	6.3E-09		
Total phase (deg)		-279.1	Apriori accel (us/s/s)	2.82407195656E-05	Resid phase (deg)	-97.3	+/-	20.2		

ph/seg (deg) 55.1 47.4 Search (1024X32) 0.147 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 83.3 82.7 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 31.9 28.6 Inc. seg. avg. 0.153 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 26.7 49.9 Inc. frq. avg. 0.155 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 340.7 el 22.9 pa 24.2 u: az 36.2 el 28.1 pa -67.5 u,v (fr/asec) 10521.644 4457.261 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/Bu..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/Bu.W.101.1HRBHI

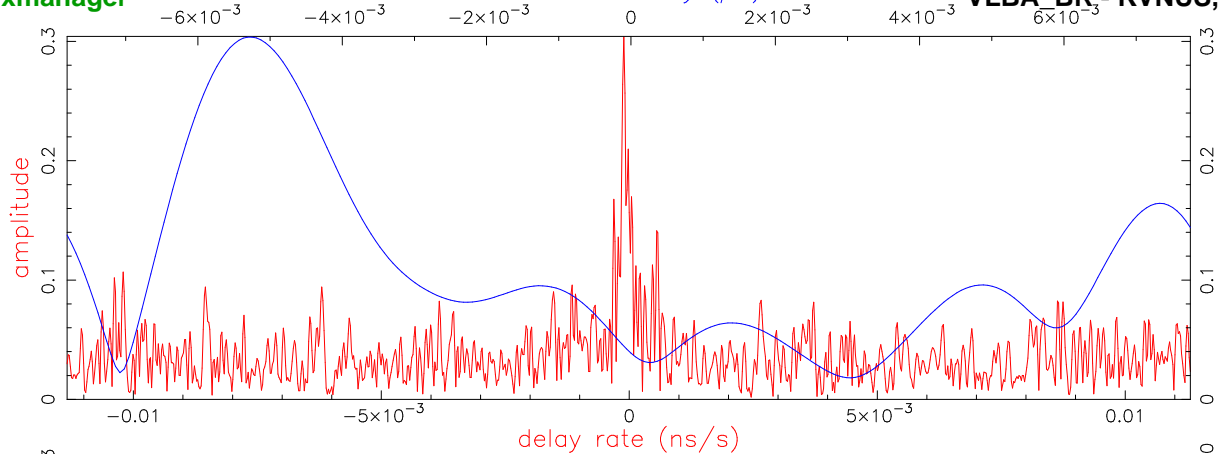
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, bu

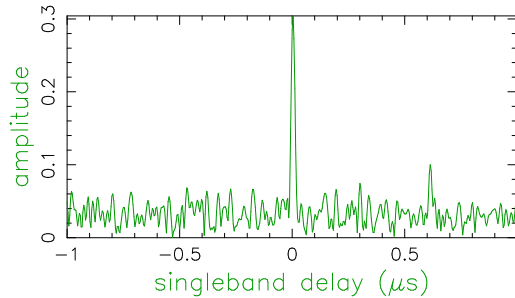
VLBA\_BR - KVNUS, fgroup W, pol RR

multiband delay ( $\mu$ s)

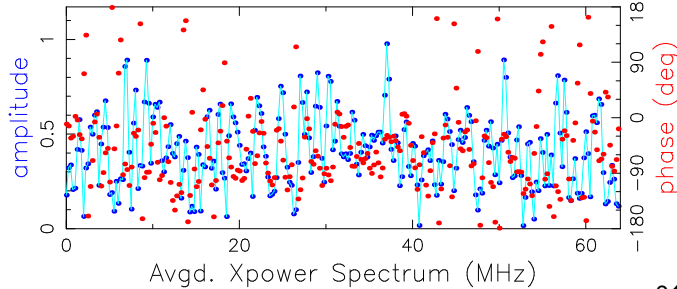


Fringe quality 9

SNR 11.2  
 Int time 179.973  
 Amp 0.304  
 Phase 37.0  
 PFD 1.5e-20  
 Delays (us)  
 SBD 0.003373  
 MBD -0.005285  
 Fringe rate (Hz)  
 -0.010223  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

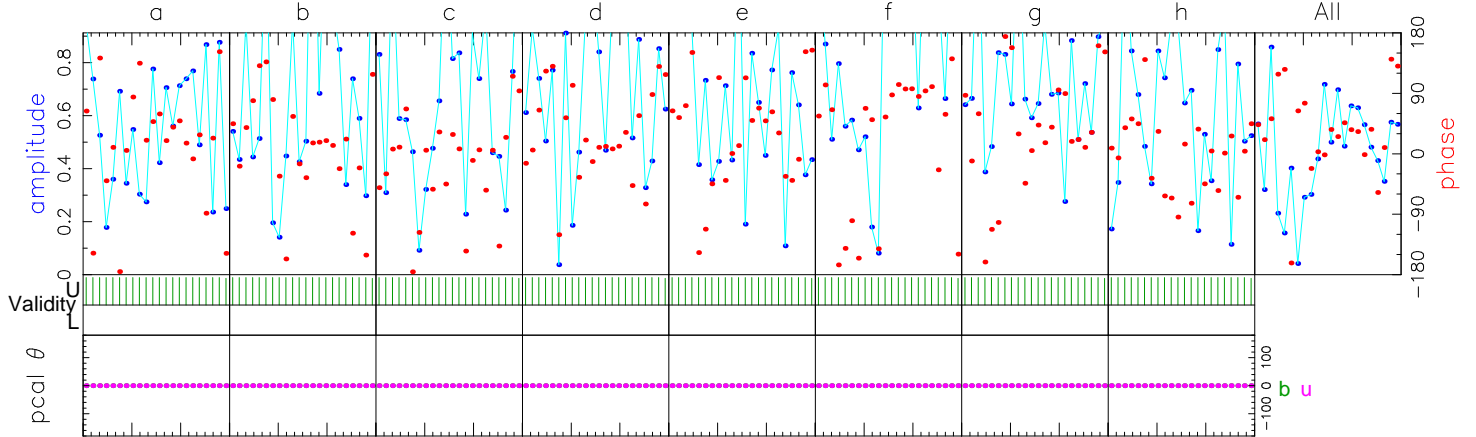


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134738  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

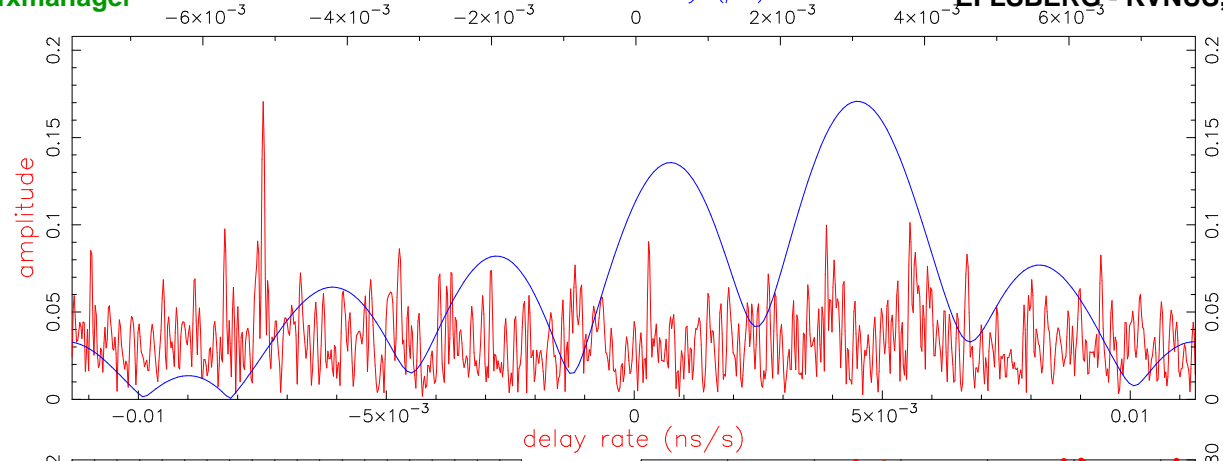
Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



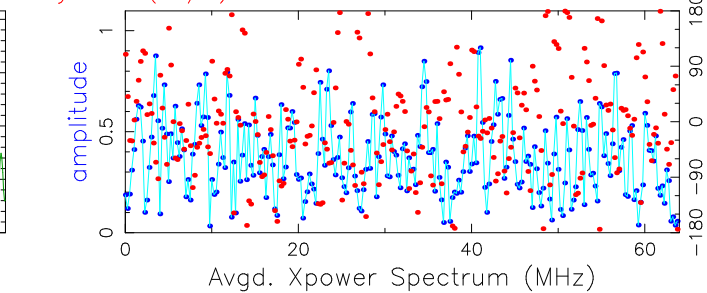
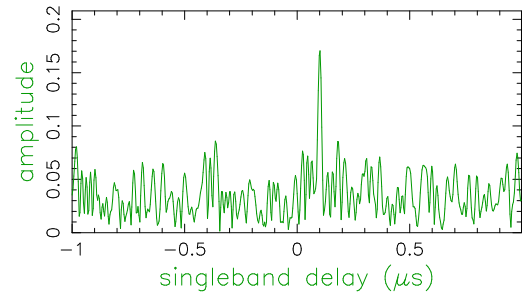
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
b	1000	1000	1000	1000	1000	1000	1000	1000		
u	1000	1000	1000	1000	1000	1000	1000	1000		
b:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
b:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
b	1000	1000	1000	1000	1000	1000	1000	1000		
u	1000	1000	1000	1000	1000	1000	1000	1000		
b	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)		1.04799872621E+04				1.04799769225E+04			Resid mbdelay (usec)	-5.28547E-03 +/- 9.7E-05
Sband delay (usec)		1.04799802953E+04				-4.2316360E+00			Resid sbdelay (usec)	3.37275E-03 +/- 7.7E-04
Phase delay (usec)		1.04799769237E+04				-3.9999997E-07			Resid phdelay (usec)	1.19400E-06 +/- 3.3E-07
Delay rate (us/s)		-8.27693162600E-01				-8.27693043927E-01			Resid rate (us/s)	-1.18673E-07 +/- 3.2E-09
Total phase (deg)			75.5			-4.00270839167E-05			Resid phase (deg)	37.0 +/- 10.3
	RMS	Theor.	Amplitude	0.304 +/- 0.027					Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
ph/seg (deg)	60.2	24.1	Search (1024X32)	0.296					Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
amp/seg (%)	82.2	42.0	Interp.	0.000					Bits/sample: 2x2	SampCntNorm: enabled mb window (us) -0.008 0.008
ph/frq (deg)	35.1	14.5	Inc. seg. avg.	0.428					Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
amp/frq (%)	33.0	25.3	Inc. frq. avg.	0.349					Data rate(Mb/s): 2048	nlags: 256 t_cohere infinite ion window (TEC) 0.00 0.00

b: az 321.3 el 75.2 pa 126.8 u: az 36.2 el 28.1 pa -67.5 u,v (fr/asec) 9041.524 -4416.609 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/bu..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/bu.W.102.1HRBHI

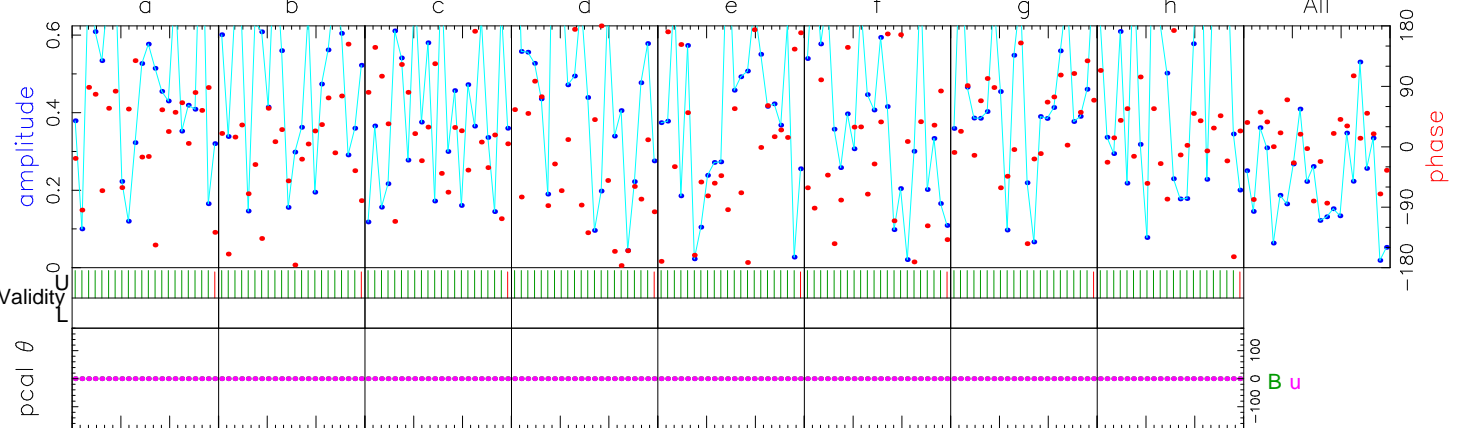
multiband delay ( $\mu$ s)



Fringe quality 0  
SNR 6.3  
Int time 179.778  
Amp 0.208  
Phase 18.5  
PFD 3.4e-02  
Delays (us)  
SBD 0.100185  
MBD 0.003020  
Fringe rate (Hz)  
-0.646413  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512  
Exp. c202a  
Exper # 16383  
Yr:day 2020:283  
Start 090000.00  
Stop 090300.22  
FRT 090130.00  
Corr/FF/build  
2021:006:172908  
2021:010:134739  
2020:247:085004  
RA & Dec (J2000)  
01h02m45.762375s  
+58°24'11.136621"



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		
u	1000	1000	1000	1000	1000	1000	1000	1000		
B:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
B:u	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		
u	1000	1000	1000	1000	1000	1000	1000	1000		
B	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)	-1.85257850820E+03								3.02048E-03	+/- 1.7E-04
Sband delay (usec)	-1.85257509368E+03								1.00185E-01	+/- 1.4E-03
Phase delay (usec)	-1.85267527808E+03								5.95275E-07	+/- 5.8E-07
Delay rate (us/s)	-9.57585803166E-01								-7.50421E-06	+/- 5.6E-09
Total phase (deg)			-163.4						18.5	+/- 18.1
Apriori delay (usec)										
Apriori clock (usec)										
Apriori clockrate (us/s)										
Apriori rate (us/s)										
Apriori accel (us/s/s)										
Resid mbdelay (usec)										
Resid sbdelay (usec)										
Resid phdelay (usec)										
Resid rate (us/s)										
Resid phase (deg)										
Pcal mode: MANUAL, MANUAL										
Pcal rate: 0.000E+00, 0.000E+00 (us/s)										
Bits/sample: 2x2										
Sample rate(MISamp/s): 128										
Data rate(Mb/s): 2048										
PC period (AP's) 5, 5										
sb window (us)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
nlags: 256										
t_cohere infinite										

ph/seg (deg) 51.5 74.2  
amp/seg (%) 77.0 44.7  
ph/frq (deg) 39.1 25.6  
amp/frq (%) 51.0 44.7

B: az 340.7 el 22.9 pa 24.2  
u: az 36.2 el 28.1 pa -67.5  
u,v (fr/asec) 10521.644 4457.261

Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/Bu..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/Bu.W.117.1HRBHI

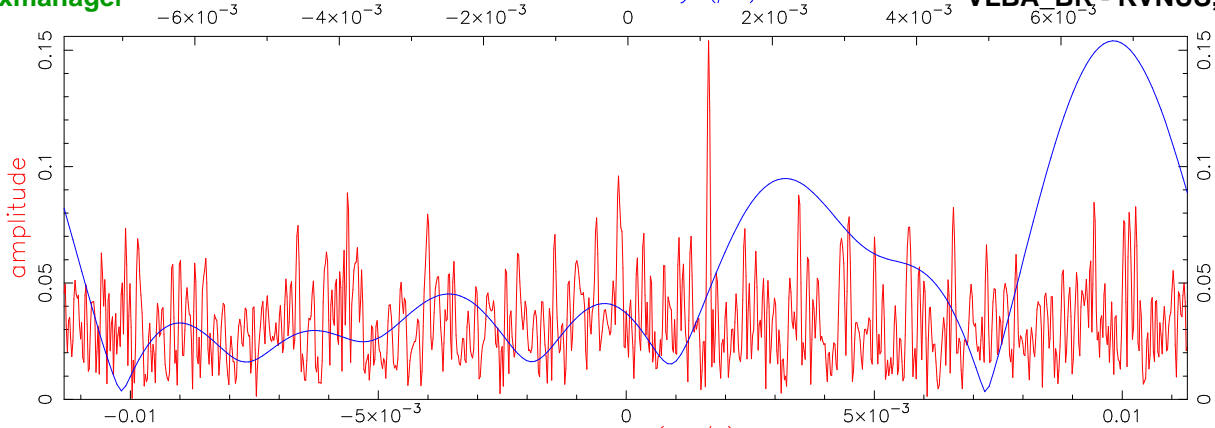
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

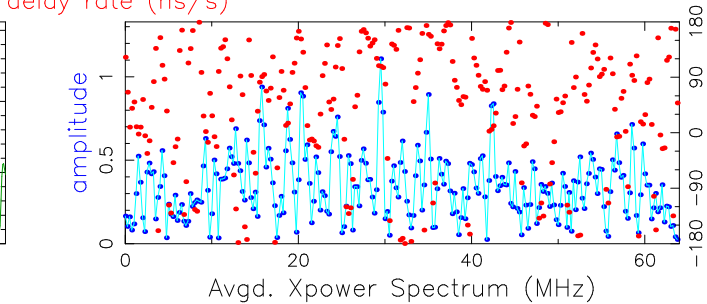
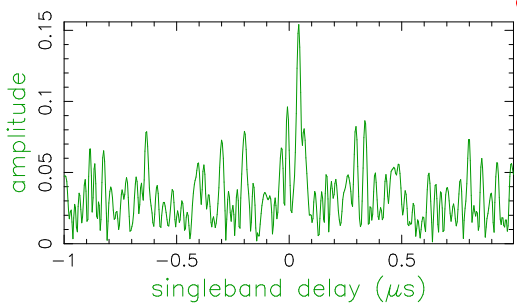
0102+584.1HRBHI, No0113, bu

VLBA\_BR - KVNUS, fgroup W, pol LR

multiband delay ( $\mu$ s)

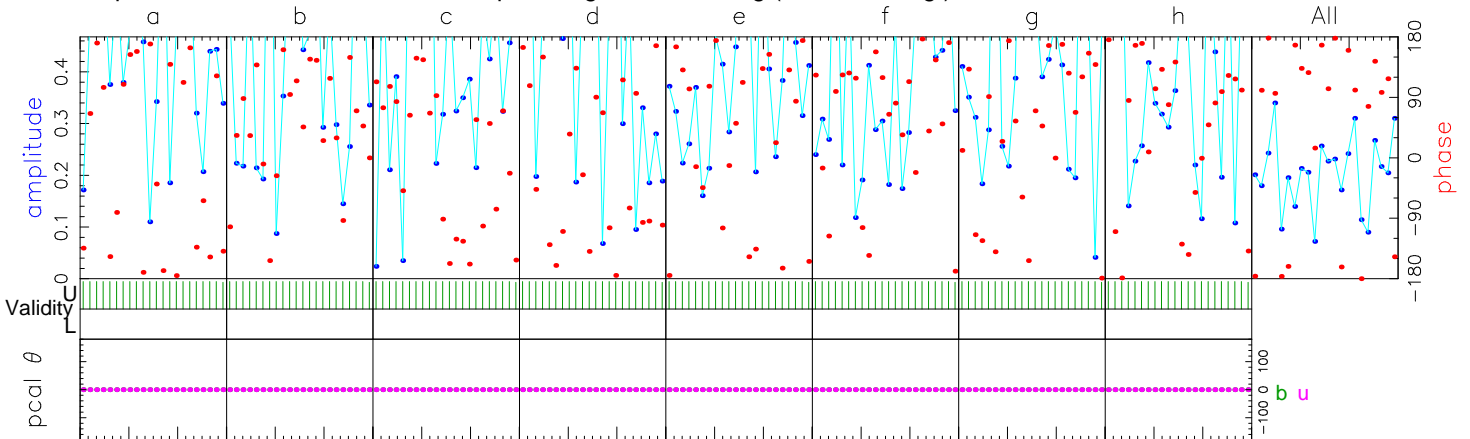


Fringe quality 0  
 SNR 5.7  
 Int time 179.973  
 Amp 0.156  
 Phase 145.6  
 PFD 8.3e-01  
 Delays (us)  
 SBD 0.042120  
 MBD 0.006728  
 Fringe rate (Hz)  
 0.143012  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134740  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"



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		
u	1000	1000	1000	1000	1000	1000	1000	1000		
b:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
b:u	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		
u	1000	1000	1000	1000	1000	1000	1000	1000		
b	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)	167.5	96.6	118.6	-168.5	146.0	121.9	153.0	151.1		
Sband delay (usec)	0.3	0.2	0.1	0.2	0.2	0.2	0.1	0.2		
Phase delay (usec)	266.7	354.6	76.8	403.3	338.8	233.0	257.1	306.9		
Delay rate (us/s)										
Total phase (deg)			184.1							
Apriori delay (usec)	1.04800149007E+04				1.04799769225E+04					
Apriori clock (usec)	1.04800190423E+04				-4.2316360E+00					
Apriori clockrate (us/s)	1.04799769272E+04				-3.9999997E-07					
Apriori rate (us/s)	-8.27691383702E-01				-8.27693043927E-01					
Apriori accel (us/s/s)					-4.00270839167E-05					
Resid mbdelay (usec)									6.72813E-03	+/- 1.9E-04
Resid sbdelay (usec)									4.21197E-02	+/- 1.5E-03
Resid phdelay (usec)									4.69676E-06	+/- 6.5E-07
Resid rate (us/s)									1.66022E-06	+/- 6.3E-09
Resid phase (deg)									145.6	+/- 20.2
Pcal mode:	MANUAL, MANUAL		PC period (AP's) 5, 5							
Pcal rate:	0.000E+00, 0.000E+00 (us/s)		sb window (us) -1.000 1.000							
Bits/sample:	2x2		SampCntNorm: enabled mb window (us) -0.008 0.008							
Sample rate (MSamp/s):	128		dr window (ns/s) -0.011 0.011							
Data rate (Mb/s):	2048		ion window (TEC) 0.00 0.00							
nlags:	256		t_cohere infinite							
simultaneous interpolator										

b: az 321.3 el 75.2 pa 126.8 u: az 36.2 el 28.1 pa -67.5 u,v (fr/asec) 9041.524 -4416.609  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/bu..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/bu.W.122.1HRBHI

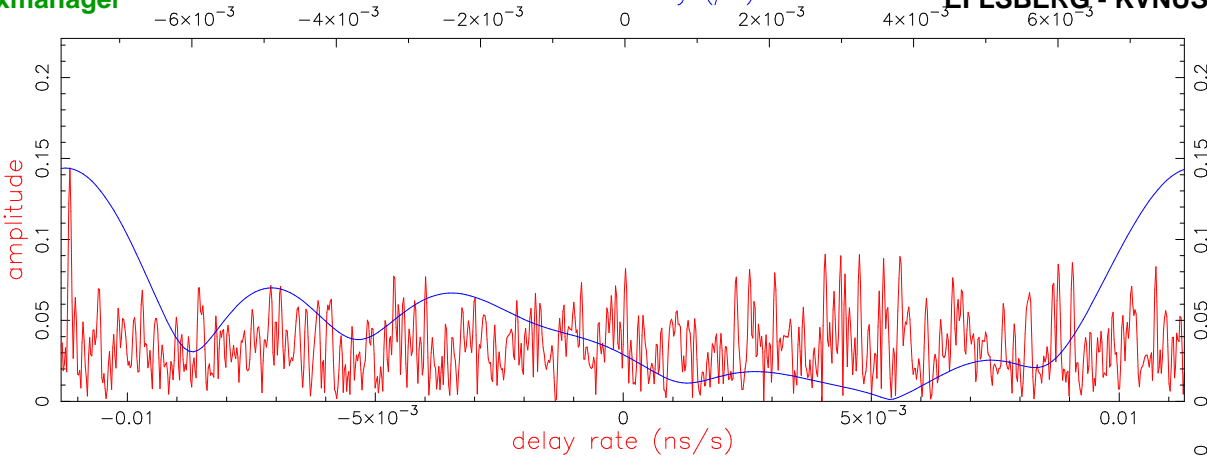
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, Bu

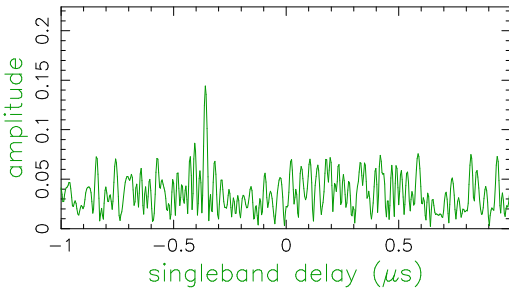
EFLSBERG - KVNUS, fgroup W, pol RL

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

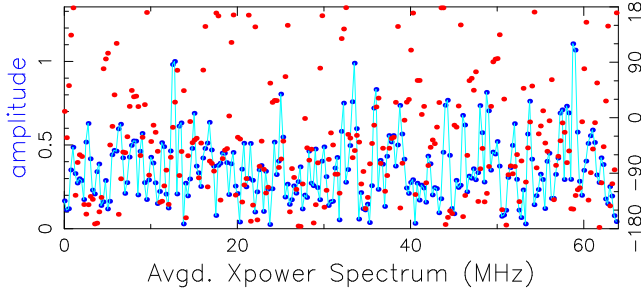


Fringe quality 0

SNR 5.3  
 Int time 179.778  
 Amp 0.224  
 Phase -154.8  
 PFD 1.0e+00  
 Delays (us)  
 SBD -0.358574  
 MBD -0.007754  
 Fringe rate (Hz)  
 -0.963048  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

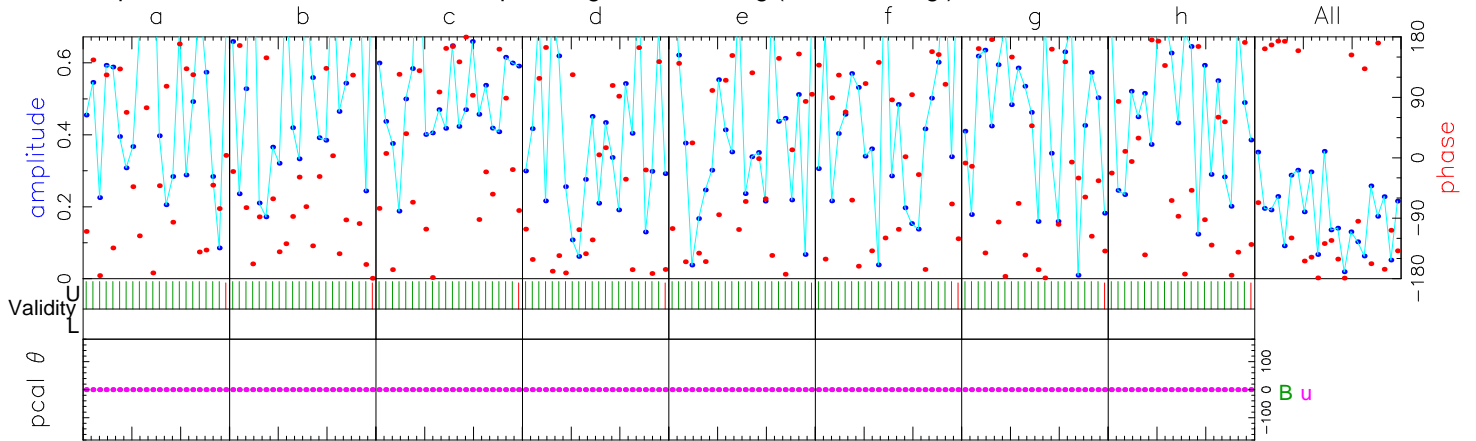


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134741  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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
	-173.1	-110.9	163.1	-179.1	-168.0	-172.1	-141.3	-129.4	Phase	-154.8
	0.3	0.4	0.1	0.3	0.3	0.3	0.2	0.2	Ampl.	0.2
	18.3	478.3	250.0	302.0	483.9	329.5	1.7	217.1	Sbd box	165.2
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	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
B:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
B:u	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	
u	1000	1000	1000	1000	1000	1000	1000	1000		
B	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd)	-1.85302678283E+03	Apriori delay (usec)	-1.85267527868E+03	Resid mbdelay (usec)	-7.75416E-03	+/-	2.0E-04
Sband delay (usec)	-1.85303385268E+03	Apriori clock (usec)	7.6005459E+00	Resid sbdelay (usec)	-3.58574E-01	+/-	1.6E-03
Phase delay (usec)	-1.85267528367E+03	Apriori clockrate (us/s)	-5.9999998E-07	Resid phdelay (usec)	-4.99143E-06	+/-	7.0E-07
Delay rate (us/s)	-9.57589478990E-01	Apriori rate (us/s)	-9.57578298952E-01	Resid rate (us/s)	-1.11800E-05	+/-	6.7E-09
Total phase (deg)	-336.7	Apriori accel (us/s/s)	2.82407195656E-05	Resid phase (deg)	-154.8	+/-	21.6

ph/seg (deg)	39.8	Theor.	50.7	Amplitude	0.224 +/- 0.042	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5	
amp/seg (%)	71.7	Search (1024X32)	0.142	Interp.	0.000	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000	
ph/frq (deg)	31.4	Inc. seg. avg.	0.206	Inc. frq. avg.	0.219	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008
amp/frq (%)	39.0	Inc. frq. avg.	0.219			Sample rate (MSamp/s):	128	dr window (ns/s)	-0.011 0.011	
						Data rate (Mb/s):	2048	ion window (TEC)	0.00 0.00	
						nlags:	256	t_cohere	infinite	

B: az 340.7 el 22.9 pa 24.2      u: az 36.2 el 28.1 pa -67.5      u,v (fr/asec) 10521.644 4457.261      simultaneous interpolator

Control file: cf\_1234\_gmva    Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/Bu..1HRBHI    Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/Bu.W.132.1HRBHI

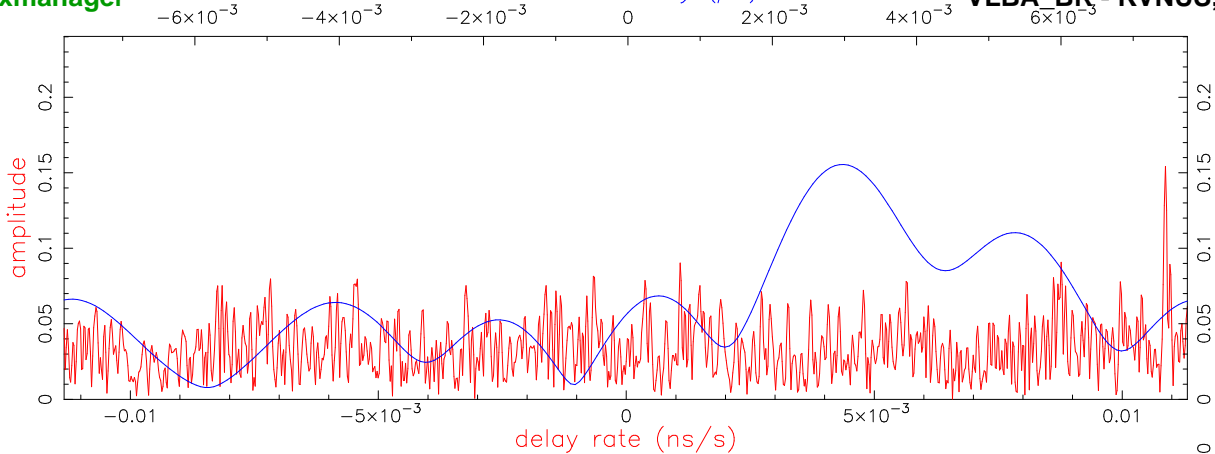
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, bu

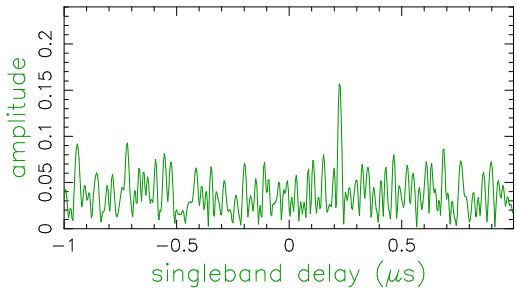
VLBA\_BR - KVNUS, fgroup W, pol RL

multiband delay ( $\mu$ s)

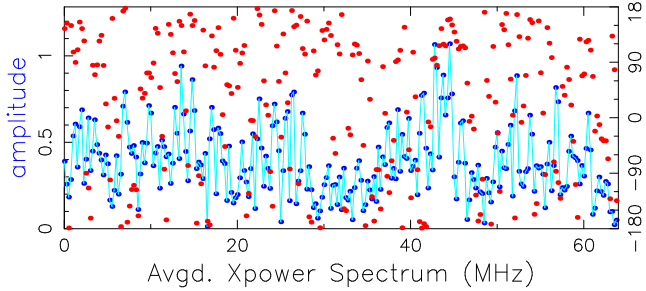


Fringe quality 0

SNR 5.8  
 Int time 179.973  
 Amp 0.240  
 Phase 164.1  
 PFD 5.0e-01  
 Delays (us)  
 SBD 0.224261  
 MBD 0.002847  
 Fringe rate (Hz) 0.937923  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512

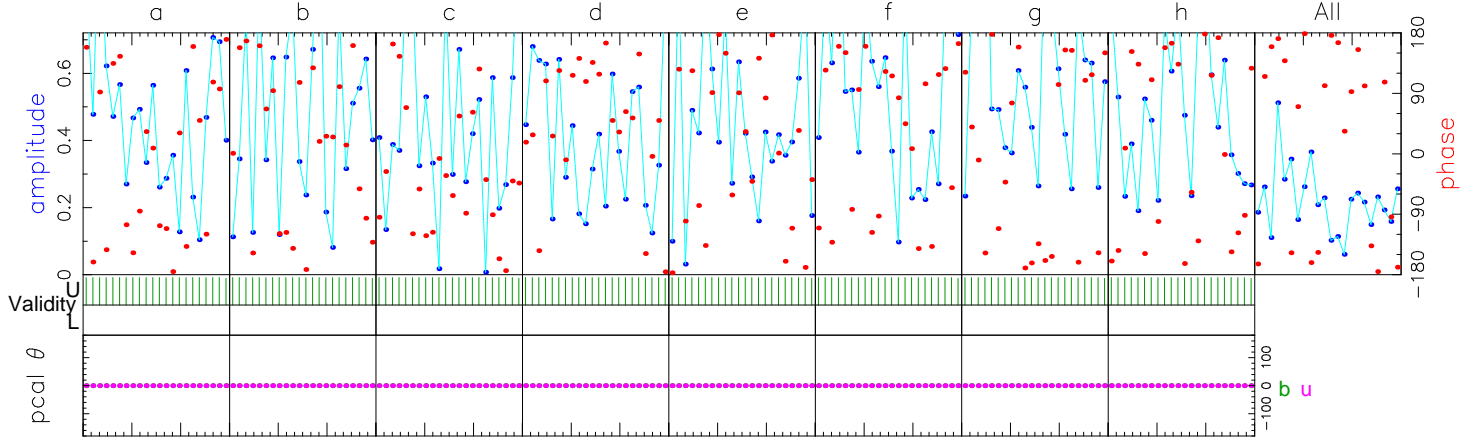


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134742  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	165.4	153.7	-69.7	99.0	147.3	163.3	175.5	-179.0	Phase	164.1
	0.3	0.2	0.2	0.3	0.2	0.3	0.4	0.4	Ampl.	0.3
	94.0	115.6	16.6	103.0	73.4	362.8	315.5	313.7	Sbd box	314.4
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	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
b:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
b:u	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	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
b	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	1.04801985195E+04		Apriori delay (usec)		1.04799769225E+04		Resid mbdelay (usec)		2.84699E-03	+/- 1.9E-04
Sband delay (usec)	1.04802011838E+04		Apriori clock (usec)		-4.2316360E+00		Resid sbdelay (usec)		2.24261E-01	+/- 1.5E-03
Phase delay (usec)	1.04799769278E+04		Apriori clockrate (us/s)		-3.9999997E-07		Resid phdelay (usec)		5.29225E-06	+/- 6.3E-07
Delay rate (us/s)	-8.27682155574E-01		Apriori rate (us/s)		-8.27693043927E-01		Resid rate (us/s)		1.08884E-05	+/- 6.1E-09
Total phase (deg)	202.6		Apriori accel (us/s/s)		-4.00270839167E-05		Resid phase (deg)		164.1	+/- 19.7

ph/seg (deg) 55.6 46.1 Amplitude 0.240 +/- 0.041 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 72.9 80.4 Search (1024X32) 0.152 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 59.1 27.8 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 44.6 48.5 Inc. seg. avg. 0.253 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 321.3 el 75.2 pa 126.8 u: az 36.2 el 28.1 pa -67.5 u,v (fr/asec) 9041.524 -4416.609 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/bu..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/bu.W.136.1HRBHI

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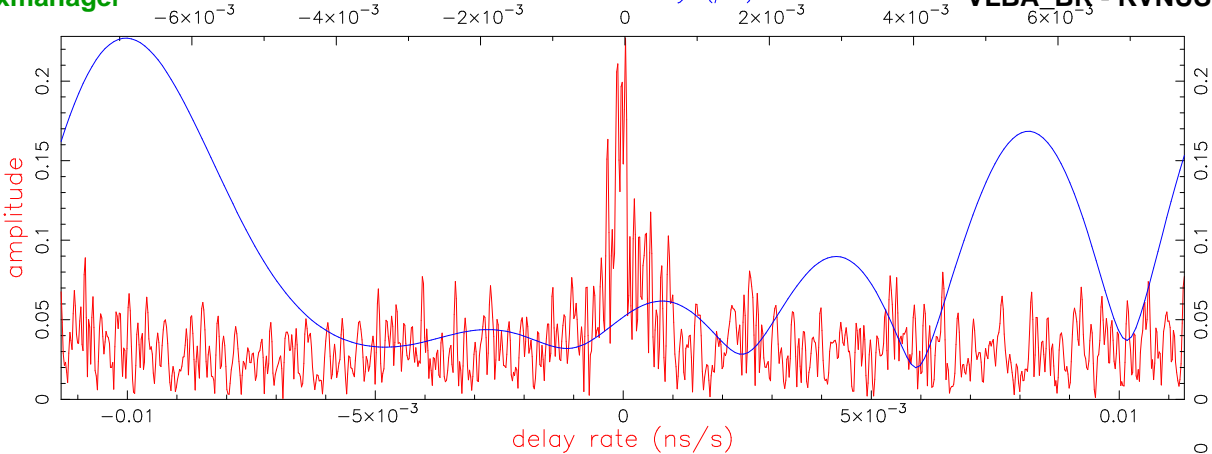
fxmanager

0102+584.1HRBHI, No0113, bu

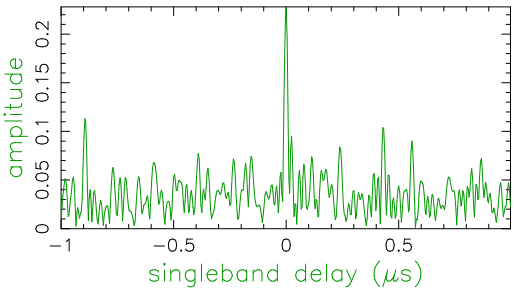
VLBA\_BR - KVNUS, fgroup W, pol LL

multiband delay ( $\mu$ s)

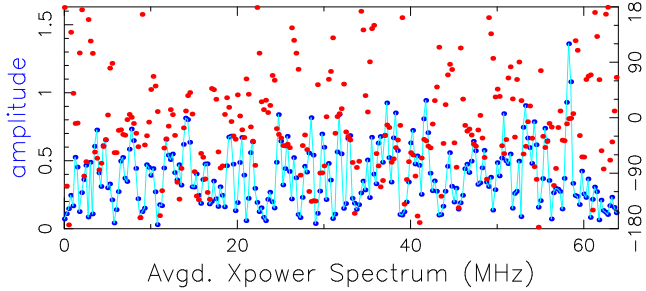
Fringe quality 9



SNR 8.4  
 Int time 179.973  
 Amp 0.228  
 Phase 42.0  
 PFD 1.1e-08  
 Delays (us)  
 SBD -0.000891  
 MBD -0.006932  
 Fringe rate (Hz) 0.003573  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512

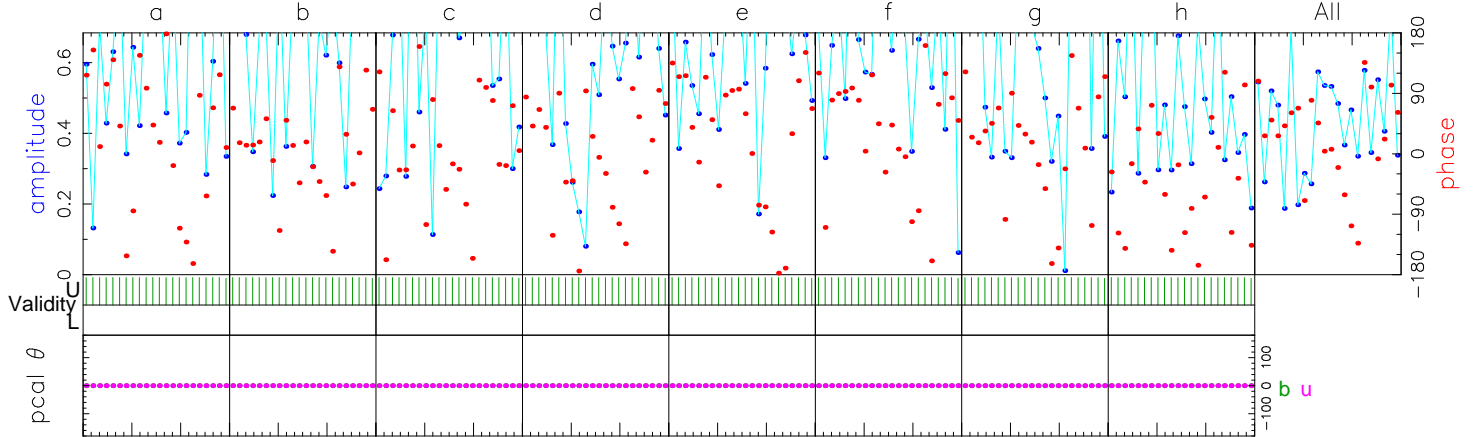


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134735  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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		
u	1000	1000	1000	1000	1000	1000	1000	1000		
b:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
b:u	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		
u	1000	1000	1000	1000	1000	1000	1000	1000		
b	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		

Group delay (usec)(sbd)	1.04799699904E+04	Apriori delay (usec)	1.04799769225E+04	Resid mbdelay (usec)	-6.93215E-03	+/-	1.3E-04
Sband delay (usec)	1.04799760313E+04	Apriori clock (usec)	-4.2316360E+00	Resid sbdelay (usec)	-8.91250E-04	+/-	1.0E-03
Phase delay (usec)	1.04799769239E+04	Apriori clockrate (us/s)	-3.9999997E-07	Resid phdelay (usec)	1.35545E-06	+/-	4.4E-07
Delay rate (us/s)	-8.27693002448E-01	Apriori rate (us/s)	-8.27693043927E-01	Resid rate (us/s)	4.14790E-08	+/-	4.2E-09
Total phase (deg)	80.5	Apriori accel (us/s/s)	-4.00270839167E-05	Resid phase (deg)	42.0	+/-	13.7

ph/seg (deg)	RMS 70.4	Theor. 32.1	Amplitude Search (1024X32)	0.228 +/- 0.027	0.226	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000	
amp/seg (%)	115.1	56.1	Interp.	0.000	0.000	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	SampCntNorm: enabled	mb window (us)	-0.008	0.008	
ph/frq (deg)	50.7	19.4	Inc. seg. avg.	0.382	0.382	Bits/sample: 2x2	Sample rate(MISamp/s): 128	dr window (ns/s)	-0.011	0.011	
amp/frq (%)	42.0	33.8	Inc. frq. avg.	0.271	0.271	Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00	0.00

b: az 321.3 el 75.2 pa 126.8 u: az 36.2 el 28.1 pa -67.5 u,v (fr/asec) 9041.524 -4416.609 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/bu...1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/bu.W.81.1HRBHI

Mk4/DiFX fourfit 3.21 rev 2937

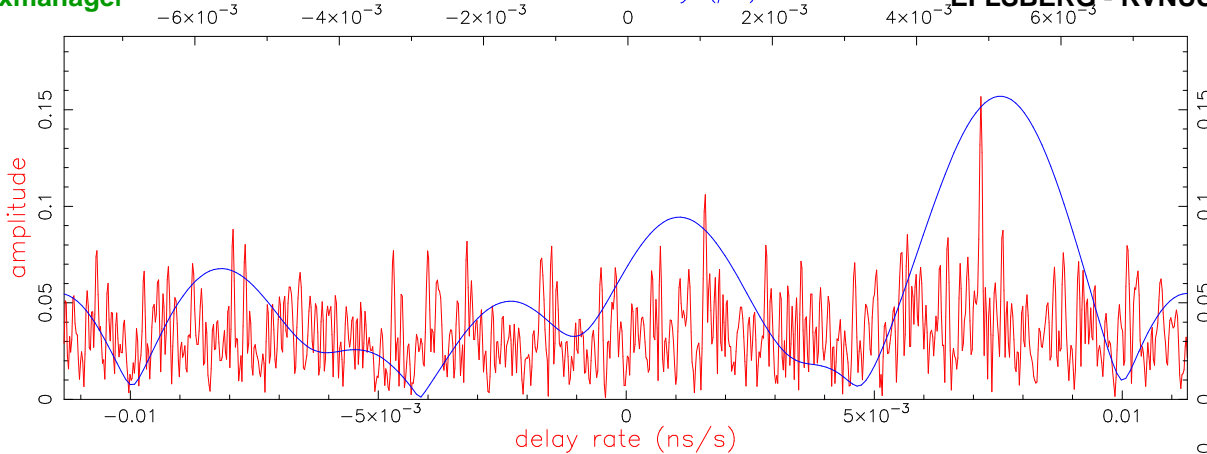
fxmanager

0102+584.1HRBHI, No0113, Bu

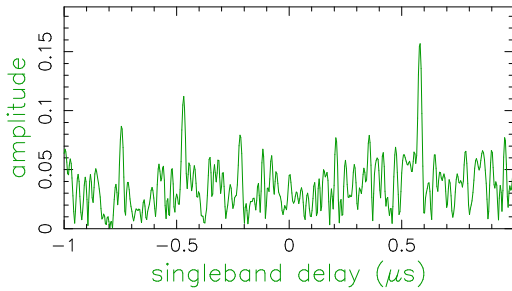
EFLSBERG - KVNUS, fgroup W, pol LL

multiband delay ( $\mu$ s)

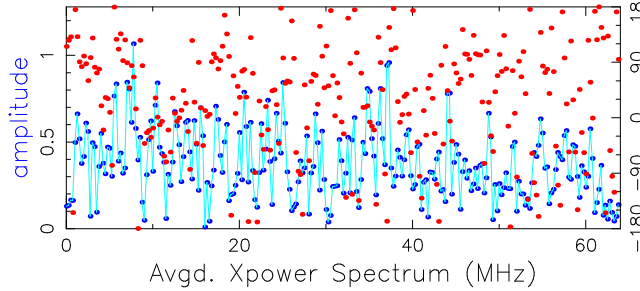
Fringe quality 0



SNR 5.8  
 Int time 179.778  
 Amp 0.188  
 Phase -155.1  
 PFD 5.3e-01  
 Delays (us)  
 SBD 0.580451  
 MBD 0.005098  
 Fringe rate (Hz) 0.616184  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512

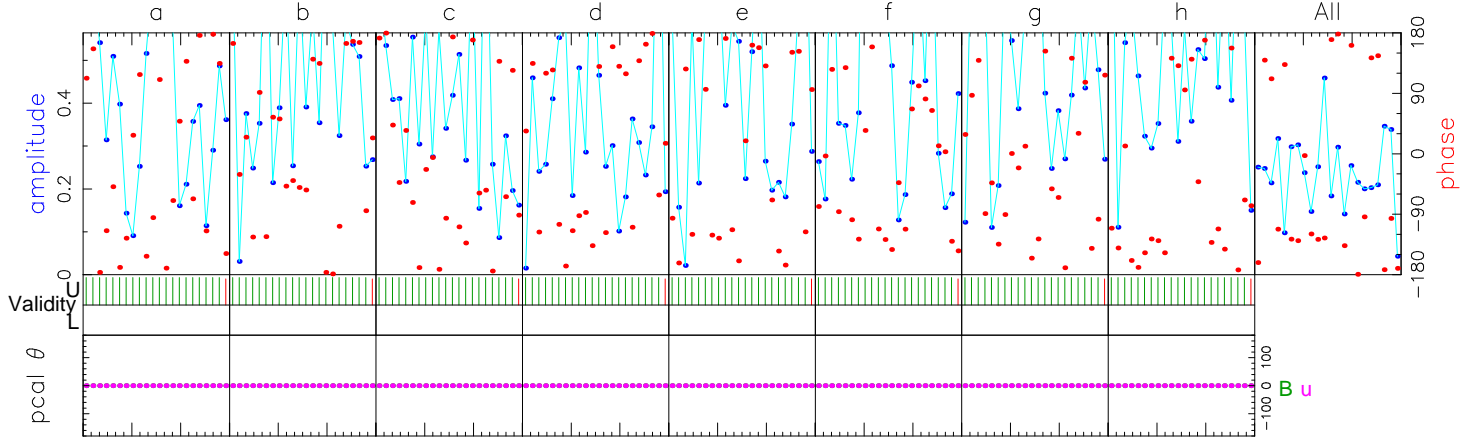


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134736  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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
	-172.3	-162.9	-118.4	-148.6	-160.5	122.8	-129.2	-149.6	Phase	-155.1
	0.2	0.2	0.2	0.2	0.3	0.1	0.1	0.4	Ampl.	0.2
	477.3	255.7	504.9	288.0	406.5	135.2	211.3	407.3	Sbd box	405.6
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
B	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
B:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
B:u	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	
u	1000	1000	1000	1000	1000	1000	1000	1000		
B	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd)	-1.85209205542E+03	Apriori delay (usec)	-1.85267527868E+03	Resid mbdelay (usec)	5.09826E-03	+/-	1.9E-04
Sband delay (usec)	-1.85209482768E+03	Apriori clock (usec)	7.6005459E+00	Resid sbdelay (usec)	5.80451E-01	+/-	1.5E-03
Phase delay (usec)	-1.85267528368E+03	Apriori clockrate (us/s)	-5.9999998E-07	Resid phdelay (usec)	-5.00034E-06	+/-	6.4E-07
Delay rate (us/s)	-9.57571145665E-01	Apriori rate (us/s)	-9.57578298952E-01	Resid rate (us/s)	7.15329E-06	+/-	6.1E-09
Total phase (deg)	-336.9	Apriori accel (us/s/s)	2.82407195656E-05	Resid phase (deg)	-155.1	+/-	19.7

ph/seg (deg)	55.5	Theor.	46.2	Amplitude	0.188 +/- 0.032	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000
amp/seg (%)	75.2		80.6	Search (1024X32)	0.155	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		mb window (us)	-0.008	0.008
ph/frq (deg)	39.2		27.9	Inc. seg. avg.	0.214	Bits/sample: 2x2	SampCntNorm: enabled	dr window (ns/s)	-0.011	0.011
amp/frq (%)	48.8		48.6	Inc. frq. avg.	0.180	Sample rate(MISamp/s): 128		ion window (TEC)	0.00	0.00
						Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite		

B: az 340.7 el 22.9 pa 24.2      u: az 36.2 el 28.1 pa -67.5      u,v (fr/asec) 10521.644 4457.261      simultaneous interpolator

Control file: cf\_1234\_gmva    Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/Bu..1HRBHI    Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/Bu.W.86.1HRBHI



Mk4/DiFX fourfit 3.21 rev 2937

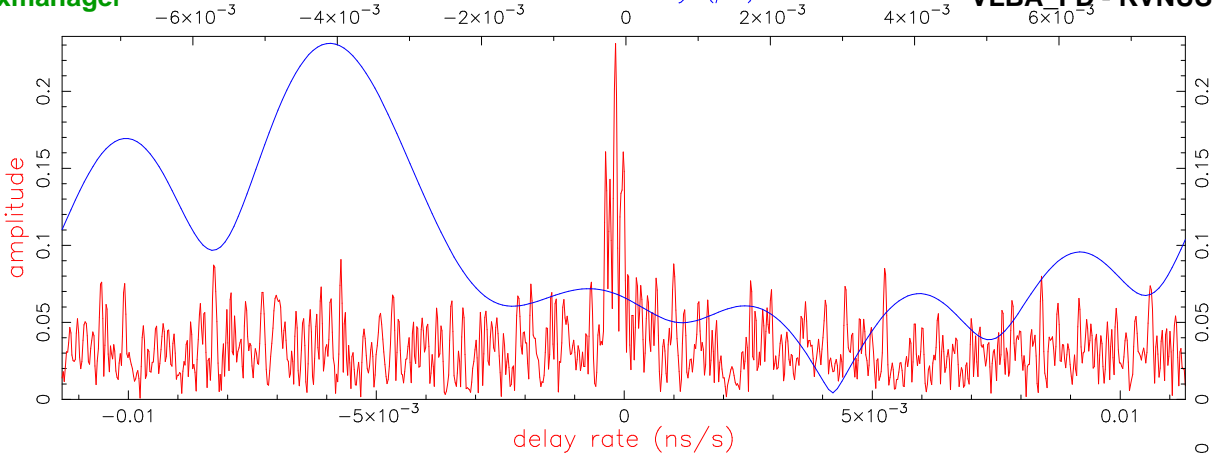
fxmanager

0102+584.1HRBHI, No0113, fu

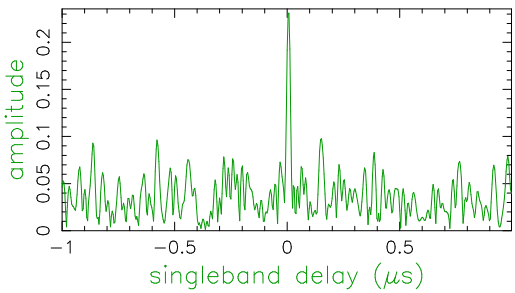
VLBA\_FD - KVNUS, fgroup W, pol LL

multiband delay ( $\mu$ s)

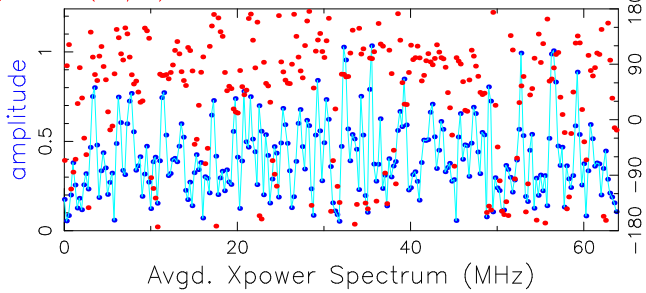
Fringe quality 9



SNR 8.6  
 Int time 179.976  
 Amp 0.236  
 Phase -148.4  
 PFD 1.0e-09  
 Delays (us)  
 SBD 0.005954  
 MBD -0.004141  
 Fringe rate (Hz)  
 -0.014979  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

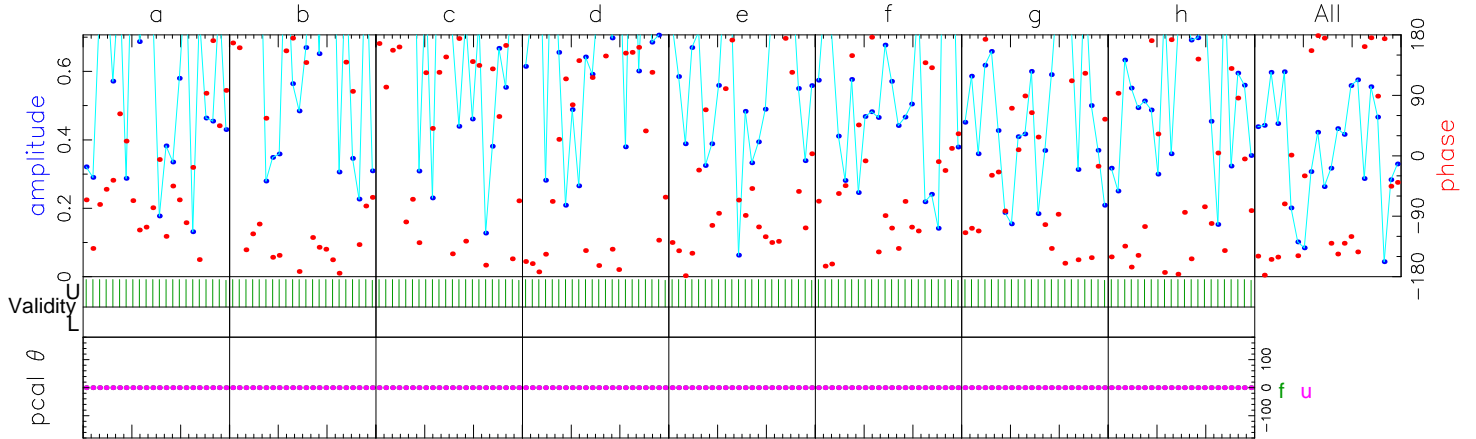


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134744  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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



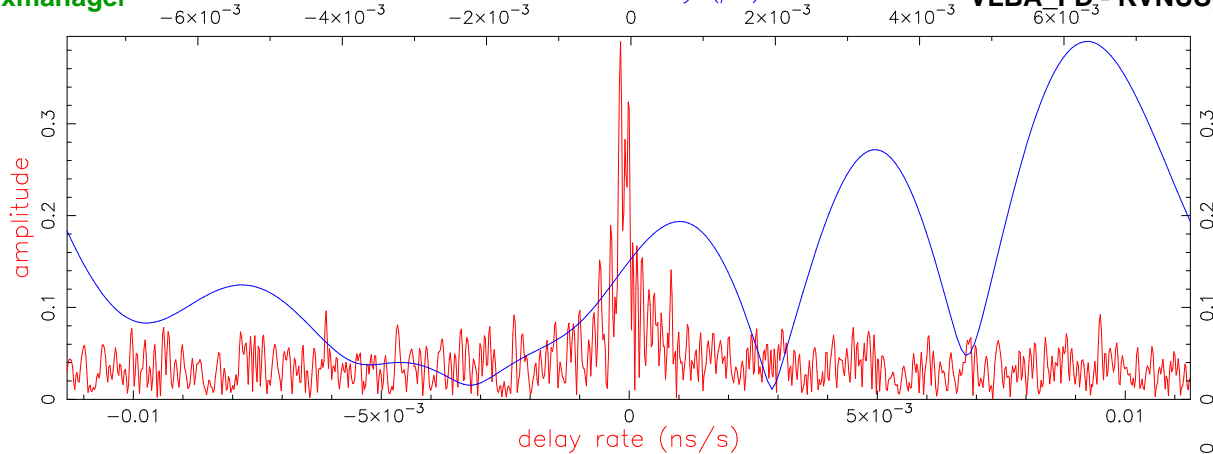
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-71.5	-156.4	170.1	-178.7	-134.7	-87.3	-134.5	-147.6	Phase	-148.4
	0.3	0.5	0.4	0.3	0.3	0.2	0.1	0.3	Ampl.	0.3
	256.9	258.0	258.3	258.7	494.6	107.3	468.3	260.0	Sbd box	258.5
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
f	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
f:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
f:u	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	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
f	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd)	7.12400506337E+03	Apriori delay (usec)	7.12399357945E+03	Resid mbdelay (usec)	-4.14108E-03	+/-	1.3E-04
Sband delay (usec)	7.12399953320E+03	Apriori clock (usec)	5.3140001E+00	Resid sbdelay (usec)	5.95375E-03	+/-	1.0E-03
Phase delay (usec)	7.12399357467E+03	Apriori clockrate (us/s)	0.0000000E+00	Resid phdelay (usec)	-4.78409E-06	+/-	4.3E-07
Delay rate (us/s)	-1.04805172837E+00	Apriori rate (us/s)	-1.04805155448E+00	Resid rate (us/s)	-1.73891E-07	+/-	4.1E-09
Total phase (deg)	187.9	Apriori accel (us/s/s)	-4.47416162290E-05	Resid phase (deg)	-148.4	+/-	13.3

ph/seg (deg)	64.9	Theor.	31.1	Amplitude	0.236 +/- 0.027	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5		
amp/seg (%)	89.5	Search (1024X32)	0.227	Interp.	0.000	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000		
ph/frq (deg)	46.0	Inc. seg. avg.	0.324	Inc. frq. avg.	0.275	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008	
amp/frq (%)	55.2	Inc. frq. avg.	0.275	Sample rate (MSamp/s):	128	Data rate (Mb/s):	2048	nlags: 256	t_cohere infinite	dr window (ns/s)	-0.011 0.011
									ion window (TEC)	0.00 0.00	

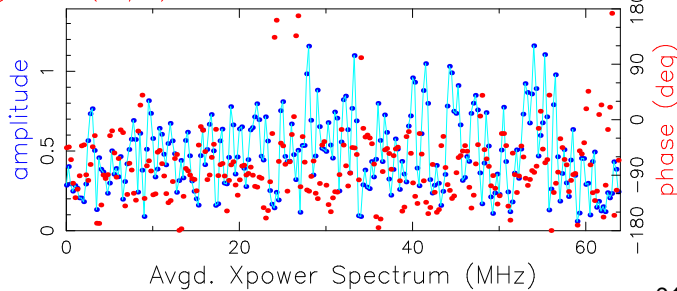
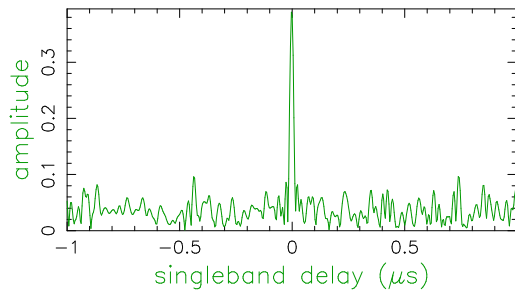
f: az 330.6 el 54.0 pa 126.2 u: az 36.2 el 28.1 pa -67.5 u,v (fr/asec) 11455.071 -6119.312 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/fu..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/fu.W.160.1HRBHI

multiband delay ( $\mu$ s)



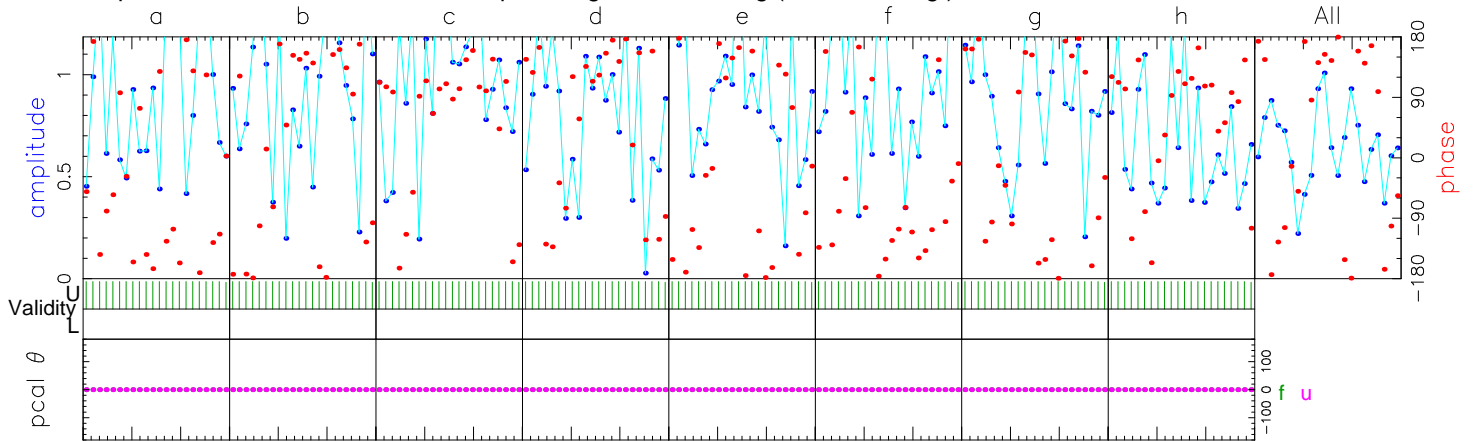
Fringe quality 8

SNR 14.5  
Int time 179.976  
Amp 0.395  
Phase 175.8  
PFD 4.0e-39  
Delays (us)  
SBD -0.002297  
MBD 0.006381  
Fringe rate (Hz)  
-0.014690  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512



Exp. c202a  
Exper # 16383  
Yr:day 2020:283  
Start 090000.00  
Stop 090300.22  
FRT 090130.00  
Corr/FF/build  
2021:006:172908  
2021:010:134746  
2020:247:085004  
RA & Dec (J2000)  
01h02m45.762375s  
+58°24'11.136621"

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
	-149.7	178.8	121.5	165.3	-179.0	-114.3	-169.1	115.7	Phase	175.8
	0.5	0.6	0.6	0.5	0.5	0.4	0.6	0.4	Ampl.	0.5
	255.0	256.3	256.4	256.9	256.9	256.9	255.7	254.8	Sbd box	256.4
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	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
f:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
f:u	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	
u	1000	1000	1000	1000	1000	1000	1000	1000		
f	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	7.12398433571E+03				7.12399357945E+03				Resid mbdelay (usec)	6.38126E-03 +/- 7.5E-05
Sband delay (usec)	7.12399128195E+03				5.3140001E+00				Resid sbdelay (usec)	-2.29750E-03 +/- 5.9E-04
Phase delay (usec)	7.12399358512E+03				0.0000000E+00				Resid phdelay (usec)	5.66842E-06 +/- 2.5E-07
Delay rate (us/s)	-1.04805172501E+00				-1.04805155448E+00				Resid rate (us/s)	-1.70531E-07 +/- 2.5E-09
Total phase (deg)		152.0			-4.47416162290E-05				Resid phase (deg)	175.8 +/- 7.9

RMS Theor. Amplitude 0.395 +/- 0.027  
 ph/seg (deg) 67.8 18.5 Search (1024X32) 0.386 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 80.8 32.4 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 11.2 Inc. seg. avg. 0.619 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 30.6 19.5 Inc. frq. avg. 0.483 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 f: az 330.6 el 54.0 pa 126.2 u: az 36.2 el 28.1 pa -67.5 u,v (fr/asec) 11455.071 -6119.312 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/fu..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/fu.W.165.1HRBHI

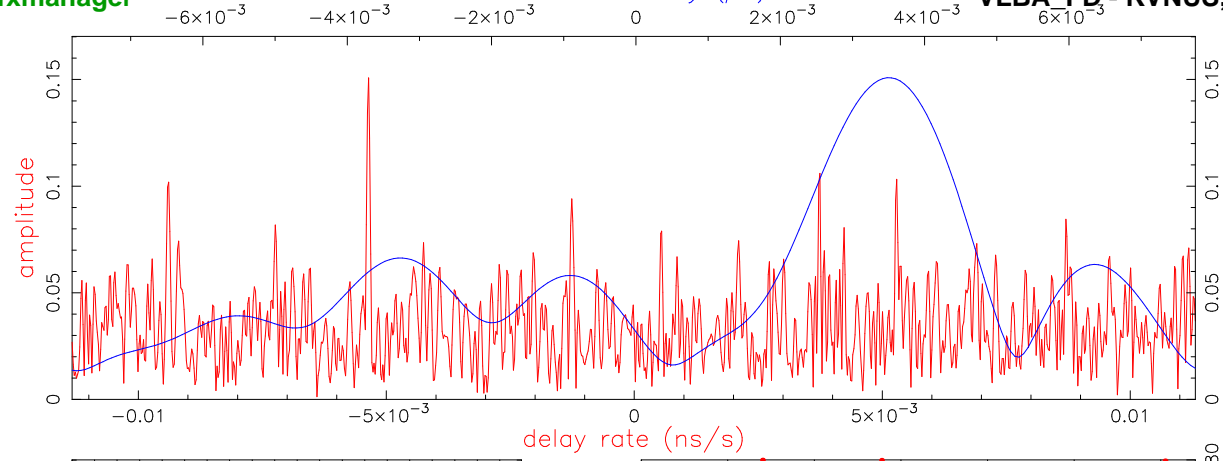
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, fu

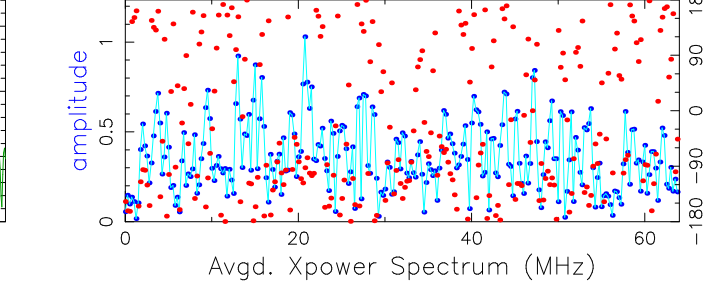
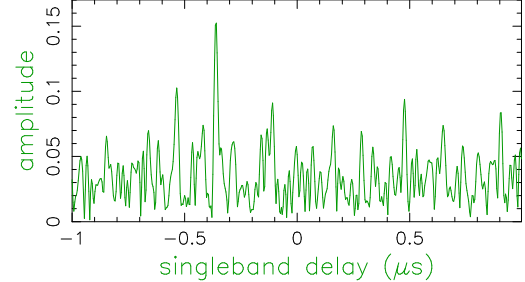
VLBA\_FD - KVNUS, fgroup W, pol LR

multiband delay ( $\mu$ s)



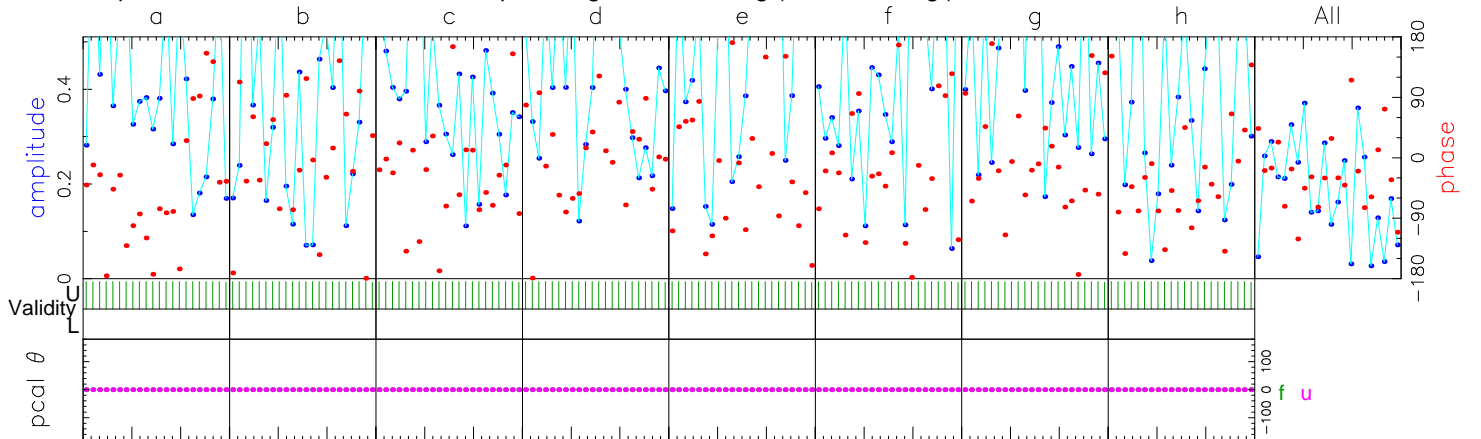
Fringe quality 0

SNR 5.7  
 Int time 179.976  
 Amp 0.170  
 Phase -33.1  
 PFD 8.0e-01  
 Delays (us)  
 SBD -0.361091  
 MBD 0.003459  
 Fringe rate (Hz)  
 -0.462987  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134749  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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
	-80.3	-0.4	-37.0	10.4	-43.4	-56.6	-18.2	-54.7	Phase	-33.1
	0.2	0.1	0.2	0.2	0.2	0.1	0.3	0.2	Ampl.	0.2
	118.8	38.9	381.7	165.5	424.4	211.2	380.4	217.7	Sbd box	164.6
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	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
f:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
f:u	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	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
f	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	7.12363766336E+03				7.12399357945E+03				Resid mbdelay (usec)	3.45890E-03 +/- 1.9E-04
Sband delay (usec)	7.12363248870E+03				5.3140001E+00				Resid sbdelay (usec)	-3.61091E-01 +/- 1.5E-03
Phase delay (usec)	7.12399357838E+03				0.0000000E+00				Resid phdelay (usec)	-1.06784E-06 +/- 6.5E-07
Delay rate (us/s)	-1.04805692929E+00				-1.04805155448E+00				Resid rate (us/s)	-5.37482E-06 +/- 6.2E-09
Total phase (deg)			303.1		-4.47416162290E-05				Resid phase (deg)	-33.1 +/- 20.2
	RMS	Theor.	Amplitude	0.170 +/- 0.030					Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
ph/seg (deg)	55.8	47.3	Search (1024X32)	0.149					Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
amp/seg (%)	71.0	82.5	Interp.	0.000					Bits/sample: 2x2	SampCntNorm: enabled mb window (us) -0.008 0.008
ph/frq (deg)	33.0	28.5	Inc. seg. avg.	0.154					Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
amp/frq (%)	37.0	49.8	Inc. frq. avg.	0.167					Data rate(Mb/s): 2048	nlags: 256 t_cohere infinite ion window (TEC) 0.00 0.00

f: az 330.6 el 54.0 pa 126.2 u: az 36.2 el 28.1 pa -67.5 u,v (fr/asec) 11455.071 -6119.312 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/fu..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/fu.W.188.1HRBHI

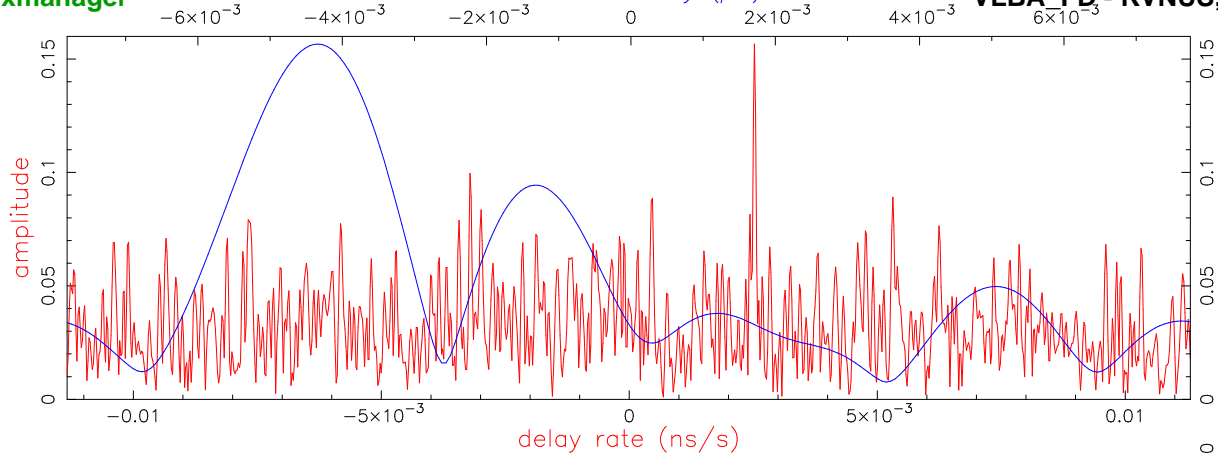
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, fu

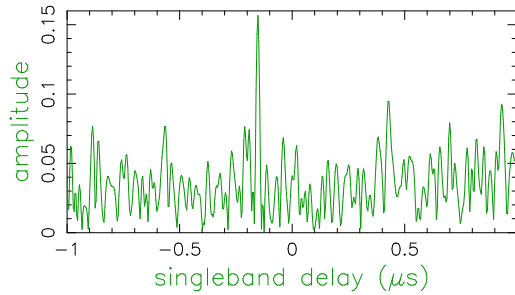
VLBA\_FD - KVNUS, fgroup W, pol RL

multiband delay ( $\mu$ s)

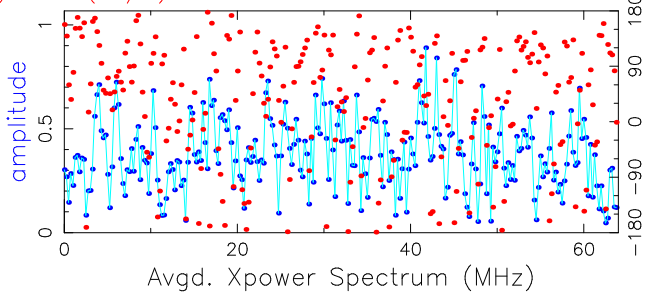


Fringe quality 0

SNR 5.7  
 Int time 179.976  
 Amp 0.160  
 Phase -170.1  
 PFD 6.7e-01  
 Delays (us)  
 SBD -0.152683  
 MBD -0.004339  
 Fringe rate (Hz)  
 0.217965  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

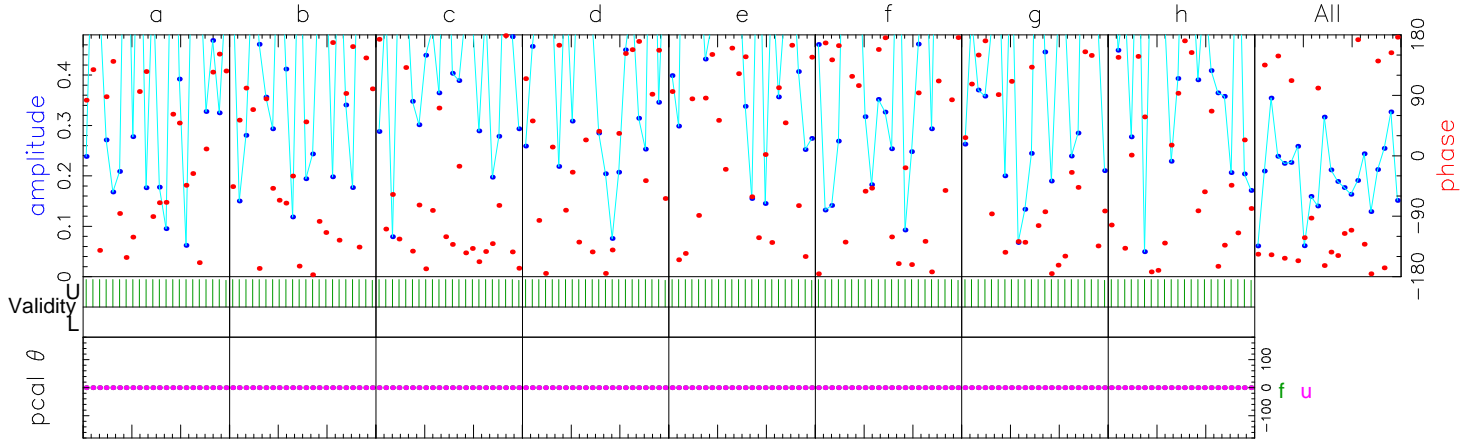


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134750  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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
	135.9	-154.0	-138.3	-177.1	168.0	168.8	-175.7	-154.2	Phase	-170.1
	0.1	0.1	0.3	0.1	0.2	0.2	0.2	0.2	Ampl.	0.2
	341.3	68.0	218.7	29.5	386.3	145.8	82.0	367.7	Sbd box	217.9
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	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
f:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
f:u	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	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
f	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd)	7.12384861530E+03	Apriori delay (usec)	7.12399357945E+03	Resid mbdelay (usec)	-4.33915E-03	+/-	1.9E-04
Sband delay (usec)	7.12384089595E+03	Apriori clock (usec)	5.3140001E+00	Resid sbdelay (usec)	-1.52683E-01	+/-	1.5E-03
Phase delay (usec)	7.12399357397E+03	Apriori clockrate (us/s)	0.0000000E+00	Resid phdelay (usec)	-5.48652E-06	+/-	6.4E-07
Delay rate (us/s)	-1.04804902411E+00	Apriori rate (us/s)	-1.04805155448E+00	Resid rate (us/s)	2.53036E-06	+/-	6.2E-09
Total phase (deg)	166.1	Apriori accel (us/s/s)	-4.47416162290E-05	Resid phase (deg)	-170.1	+/-	19.9

ph/seg (deg)	43.8	Theor.	46.7	Amplitude	0.160 +/- 0.028	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
amp/seg (%)	55.9	Search (1024X32)	0.150	Interp.	0.000	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
ph/frq (deg)	30.1	Inc. seg. avg.	0.157	Inc. frq. avg.	0.157	Bits/sample: 2x2	mb window (us) -0.008 0.008
amp/frq (%)	43.4	Inc. frq. avg.	0.157			Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
						Data rate(Mb/s): 2048	ion window (TEC) 0.00 0.00

f: az 330.6 el 54.0 pa 126.2 u: az 36.2 el 28.1 pa -67.5 u,v (fr/asec) 11455.071 -6119.312 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/fu..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/fu.W.202.1HRBHI

Mk4/DiFX fourfit 3.21 rev 2937

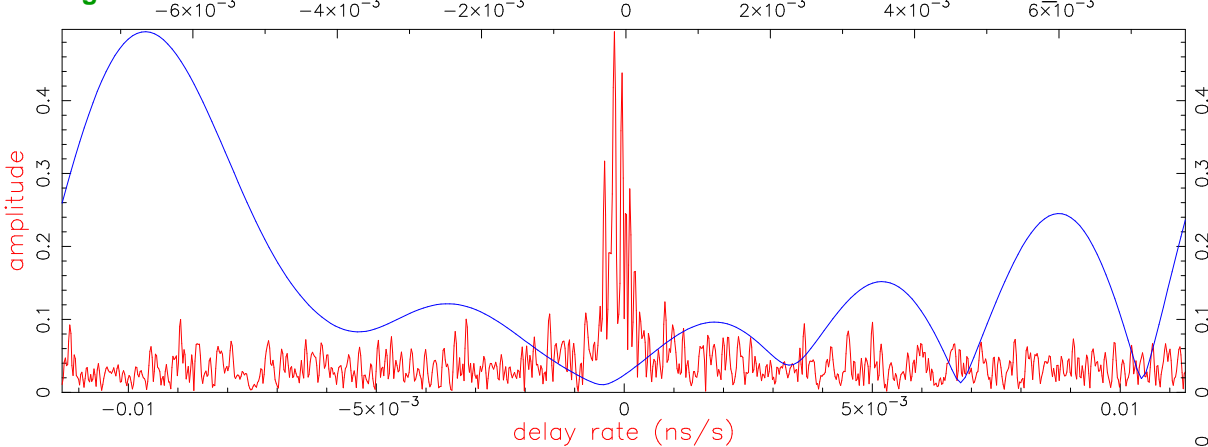
fxmanager

0102+584.1HRBHI, No0113, ku

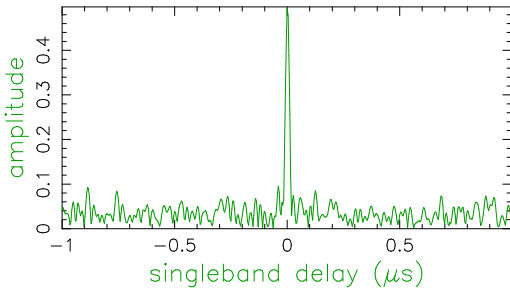
VLBA\_KP - KVNUS, fgroup W, pol LL

multiband delay ( $\mu$ s)

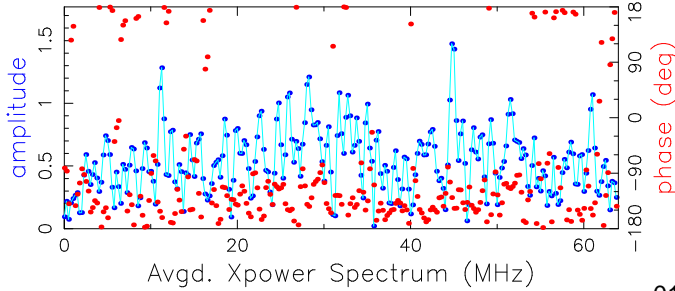
Fringe quality 8



SNR 18.3  
 Int time 179.955  
 Amp 0.498  
 Phase -50.3  
 PFD 0.0e+00  
 Delays (us)  
 SBD 0.001099  
 MBD -0.006635  
 Fringe rate (Hz)  
 -0.016398  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

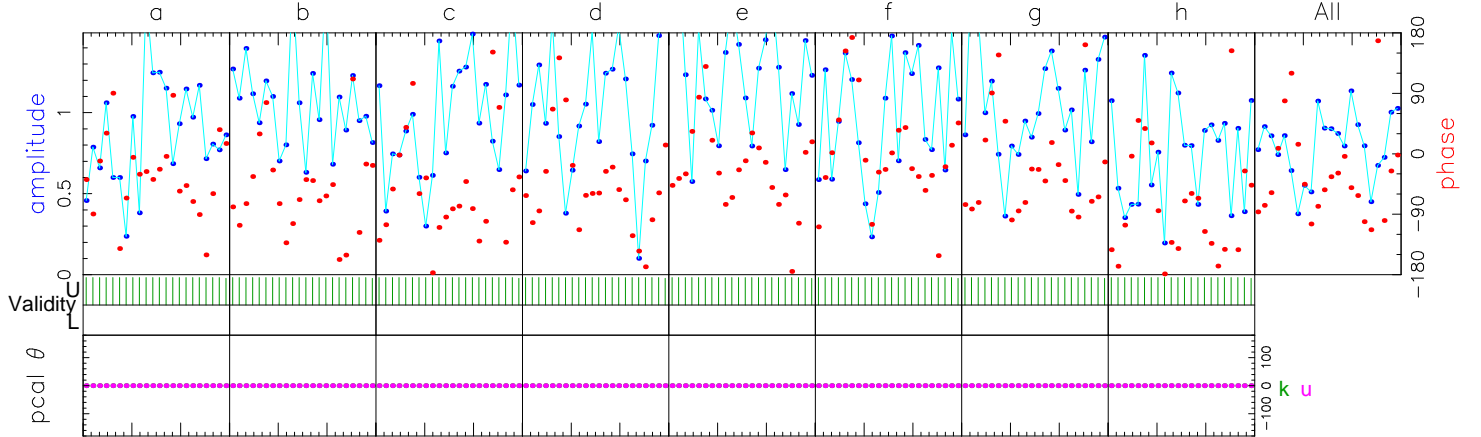


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134748  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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
	-31.3	-67.6	-81.5	-54.9	-26.0	-4.6	-48.9	-109.3	Phase	-50.3
	0.6	0.6	0.5	0.6	0.8	0.4	0.6	0.4	Ampl.	0.6
	255.6	257.3	257.6	257.7	257.3	257.5	256.8	256.0	Sbd box	257.3
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	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
k:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
ku	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
k	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
u	1000	1000	1000	1000	1000	1000	1000	1000		
k	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	7.99493099269E+03		Apriori delay (usec)		7.99493762751E+03		Resid mbdelay (usec)		-6.63482E-03	+/- 5.9E-05
Sband delay (usec)	7.99493872676E+03		Apriori clock (usec)		-2.1932268E+00		Resid sbdelay (usec)		1.09925E-03	+/- 4.7E-04
Phase delay (usec)	7.99493762588E+03		Apriori clockrate (us/s)		-2.9999999E-07		Resid phdelay (usec)		-1.62223E-06	+/- 2.0E-07
Delay rate (us/s)	-9.62985038522E-01		Apriori rate (us/s)		-9.62984848153E-01		Resid rate (us/s)		-1.90368E-07	+/- 1.9E-09
Total phase (deg)			Apriori accel (us/s/s)		-4.75165272853E-05		Resid phase (deg)		-50.3	+/- 6.3

ph/seg (deg) 65.3 14.7 Search (1024X32) 0.471 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 71.6 25.7 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 36.1 8.9 Inc. seg. avg. 0.770 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 25.7 15.5 Inc. frq. avg. 0.552 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 334.4 el 58.2 pa 135.0 u: az 36.2 el 28.1 pa -67.5 u,v (fr/asec) 10519.956 -6379.808 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/ku..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/ku.W.177.1HRBHI

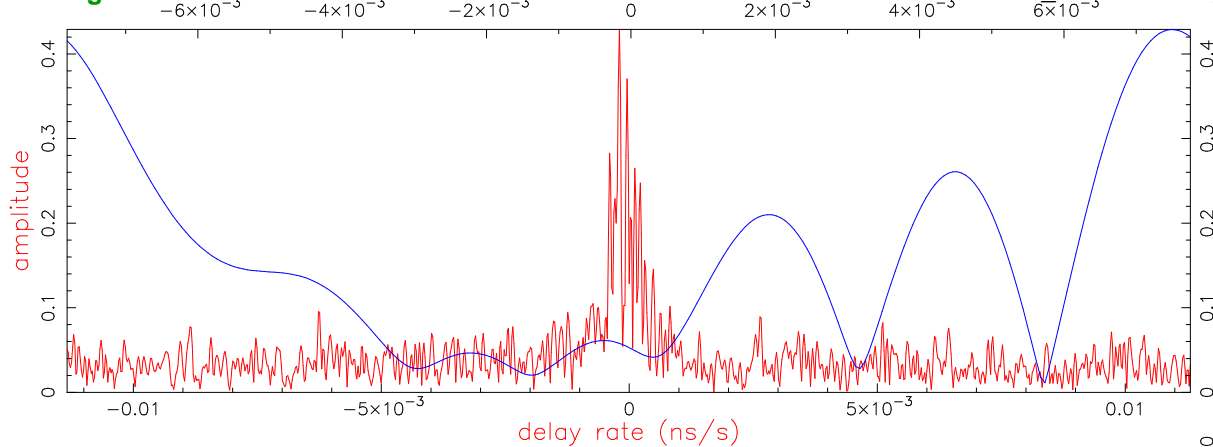
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, ku

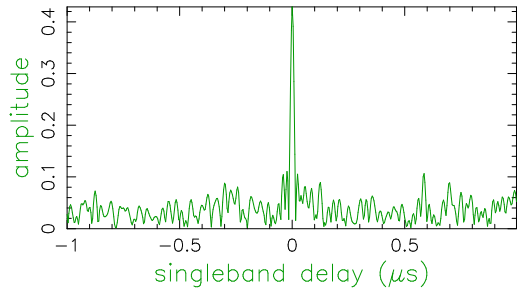
VLBA\_KP- KVNUS, fgroup W, pol RR

multiband delay ( $\mu$ s)

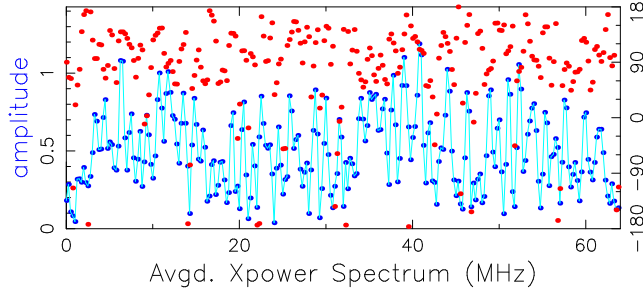


Fringe quality 8

SNR 15.7  
 Int time 179.955  
 Amp 0.429  
 Phase 22.3  
 PFD 0.0e+00  
 Delays (us)  
 SBD 0.000187  
 MBD 0.007509  
 Fringe rate (Hz)  
 -0.016849  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

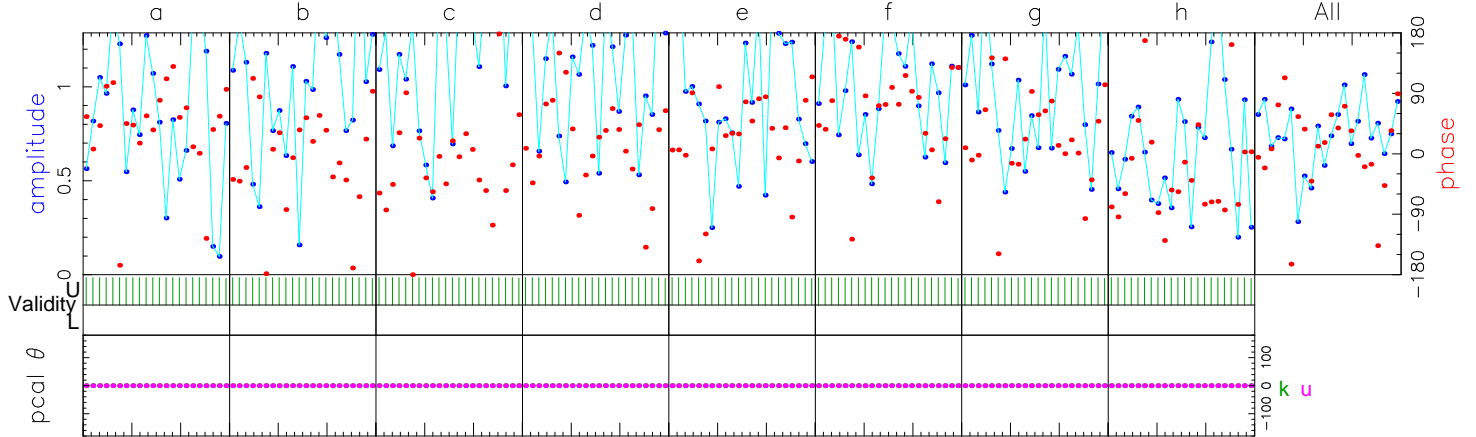


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134750  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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

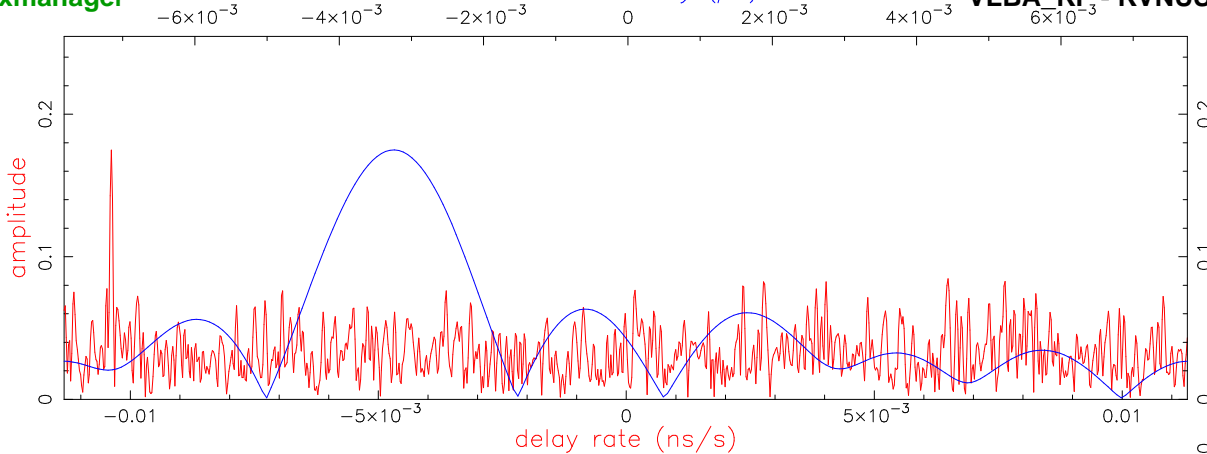


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
k	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
k:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
ku	0:0	0:0	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	
u	1000	1000	1000	1000	1000	1000	1000	1000		
k	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
Group delay (usec)(sbd)	7.99494513628E+03					7.99493762751E+03			Resid mbdelay (usec)	7.50877E-03 +/- 6.9E-05
Sband delay (usec)	7.99493781426E+03					-2.1932268E+00			Resid sbdelay (usec)	1.86750E-04 +/- 5.5E-04
Phase delay (usec)	7.99493762823E+03					-2.9999999E-07			Resid phdelay (usec)	7.19692E-07 +/- 2.3E-07
Delay rate (us/s)	-9.62985043751E-01					-9.62984848153E-01			Resid rate (us/s)	-1.95597E-07 +/- 2.3E-09
Total phase (deg)		106.4				-4.75165272853E-05			Resid phase (deg)	22.3 +/- 7.3
	RMS	Theor.	Amplitude	0.429 +/- 0.027					PCal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
ph/seg (deg)	64.6	17.1	Search (1024X32)	0.420					PCal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
amp/seg (%)	85.0	29.8	Interp.	0.000					Bits/sample: 2x2	mb window (us) -0.008 0.008
ph/frq (deg)	47.5	10.3	Inc. seg. avg.	0.717					Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
amp/frq (%)	31.2	18.0	Inc. frq. avg.	0.535					Data rate(Mb/s): 2048	ion window (TEC) 0.00 0.00
									nlags: 256	t_cohere infinite

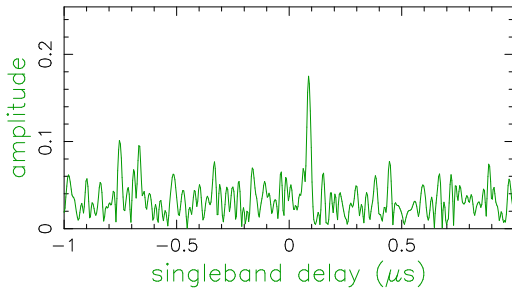
k: az 334.4 el 58.2 pa 135.0 u: az 36.2 el 28.1 pa -67.5 u,v (fr/asec) 10519.956 -6379.808 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/ku..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/ku.W.198.1HRBHI

multiband delay ( $\mu$ s)

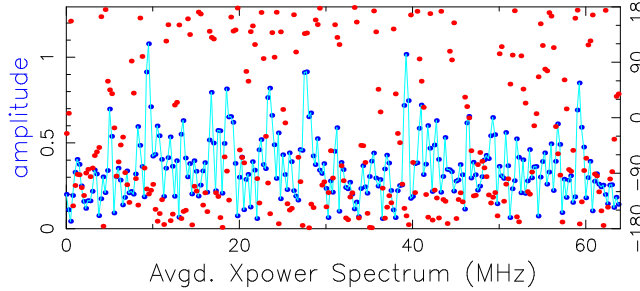
Fringe quality 0



SNR 6.4  
 Int time 179.955  
 Amp 0.255  
 Phase 164.0  
 PFD 1.7e-02  
 Delays (us)  
 SBD 0.086617  
 MBD -0.003219  
 Fringe rate (Hz)  
 -0.895191  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

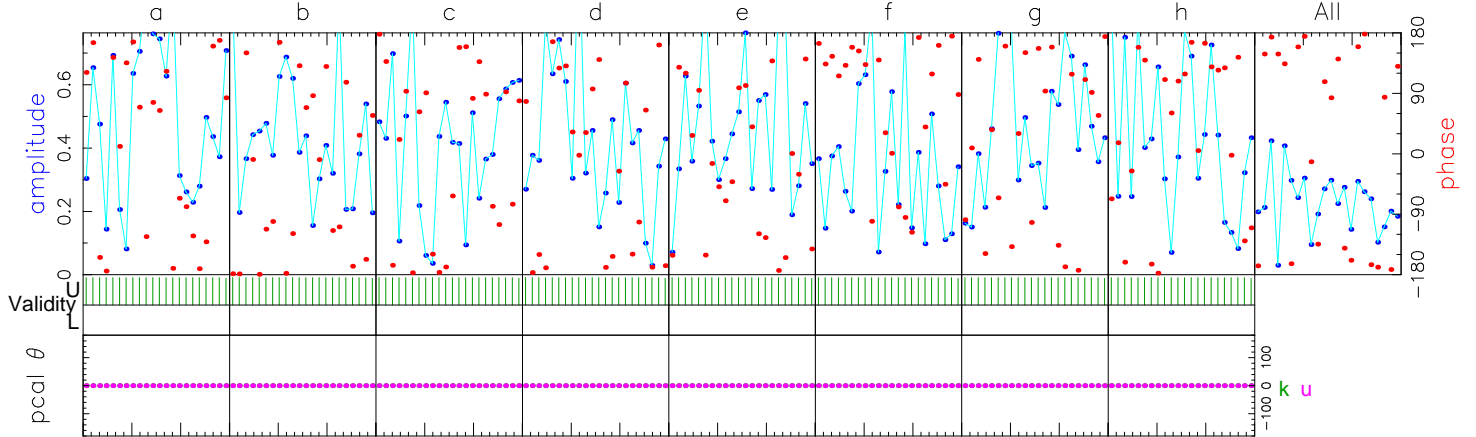


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134752  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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			
u	1000	1000	1000	1000	1000	1000	1000	1000			
k:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0			
ku	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			
u	1000	1000	1000	1000	1000	1000	1000	1000			
k	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL			
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR			
Group delay (usec)(sbd)	7.99502815813E+03				7.99493762751E+03				Resid mbdelay (usec)	-3.21938E-03	+/- 1.7E-04
Sband delay (usec)	7.99502424426E+03				-2.1932268E+00				Resid sbdelay (usec)	8.66167E-02	+/- 1.3E-03
Phase delay (usec)	7.99493763280E+03				-2.9999999E-07				Resid phdelay (usec)	5.29000E-06	+/- 5.7E-07
Delay rate (us/s)	-9.62995240436E-01				-9.62984848153E-01				Resid rate (us/s)	-1.03923E-05	+/- 5.5E-09
Total phase (deg)			248.1		-4.75165272853E-05				Resid phase (deg)	164.0	+/- 17.8
RMS	53.6	41.8			0.255 +/- 0.040				PCal mode: MANUAL, MANUAL		
ph/seg (deg)	53.6	41.8			0.169				PCal rate: 0.000E+00, 0.000E+00 (us/s)		
amp/seg (%)	61.0	72.9			0.000				Bits/sample: 2x2	sb window (us)	-1.000 1.000
ph/frq (deg)	14.1	25.2			0.264				SampCntNorm: enabled	mb window (us)	-0.008 0.008
amp/frq (%)	22.5	44.0			0.237				Sample rate(MISamp/s): 128	dr window (ns/s)	-0.011 0.011
									Data rate(Mb/s): 2048	ion window (TEC)	0.00 0.00
									nlags: 256	t_cohere infinite	
k: az 334.4 el 58.2 pa 135.0					u: az 36.2 el 28.1 pa -67.5						simultaneous interpolator
Control file: cf_1234_gmva					Input file: /Exps/c202a/v1/v1_3mm/1234/No0113/ku..1HRBHI						Output file: /Exps/c202a/v1/v1_3mm/1234/No0113/ku.W.214.1HRBHI

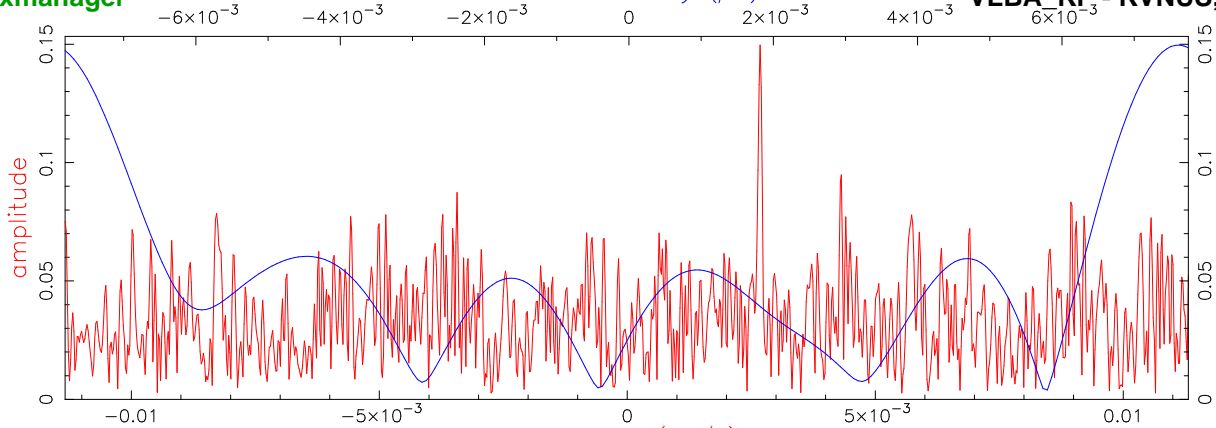
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, ku

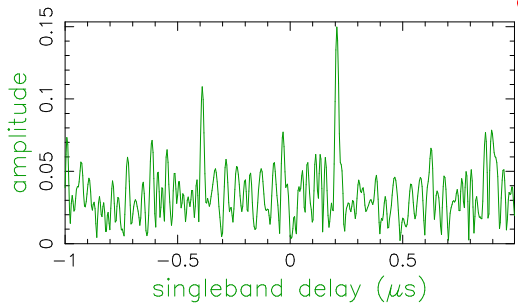
VLBA\_KP - KVNUS, fgroup W, pol RL

multiband delay ( $\mu$ s)

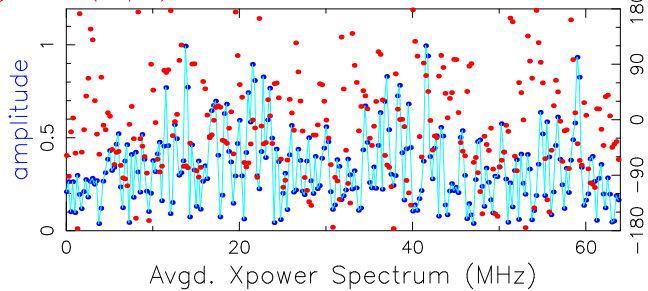


Fringe quality 0

SNR 5.5  
 Int time 179.955  
 Amp 0.153  
 Phase 125.9  
 PFD 9.9e-01  
 Delays (us)  
 SBD 0.207512  
 MBD 0.007623  
 Fringe rate (Hz)  
 0.230404  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

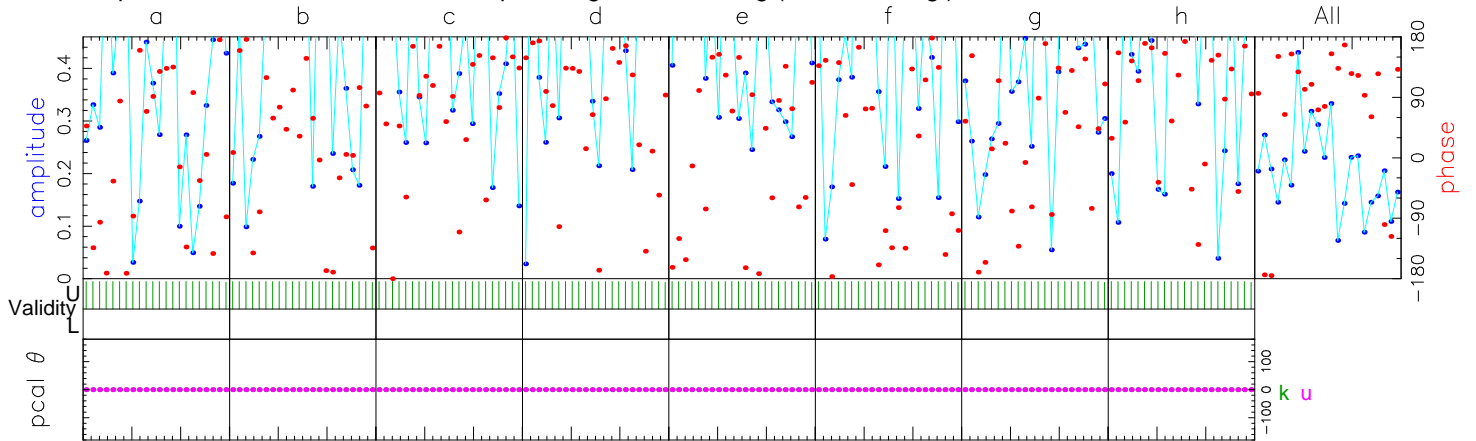


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134754  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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
	161.7	77.2	117.6	123.2	166.3	165.6	84.1	120.7	Phase	125.9
	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	Ampl.	0.2
	484.6	40.3	290.8	473.4	173.9	420.2	424.3	72.2	Sbd box	310.1
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	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
k:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
ku	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	
u	1000	1000	1000	1000	1000	1000	1000	1000		
k	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Tracks	
Group delay (usec)(sbd)	7.99514837598E+03		Apriori delay (usec)		7.99493762751E+03		Resid mbdelay (usec)		7.62348E-03	+/- 2.0E-04
Sband delay (usec)	7.99514513951E+03		Apriori clock (usec)		-2.1932268E+00		Resid sbdelay (usec)		2.07512E-01	+/- 1.6E-03
Phase delay (usec)	7.99493763157E+03		Apriori clockrate (us/s)		-2.9999999E-07		Resid phdelay (usec)		4.05891E-06	+/- 6.7E-07
Delay rate (us/s)	-9.62982173392E-01		Apriori rate (us/s)		-9.62984848153E-01		Resid rate (us/s)		2.67476E-06	+/- 6.5E-09
Total phase (deg)			Apriori accel (us/s/s)		-4.75165272853E-05		Resid phase (deg)		125.9	+/- 20.8

	RMS	Theor.	Amplitude	0.153 +/- 0.028	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000
ph/seg (deg)	52.0	48.9	Search (1024X32)	0.148	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		mb window (us)	-0.008	0.008
amp/seg (%)	68.7	85.3	Interp.	0.000	Bits/sample: 2x2	SampCntNorm: enabled	dr window (ns/s)	-0.011	0.011
ph/frq (deg)	38.1	29.5	Inc. seg. avg.	0.158	Sample rate(MISamp/s): 128		ion window (TEC)	0.00	0.00
amp/frq (%)	28.7	51.5	Inc. frq. avg.	0.157	Data rate(Mb/s): 2048	nlags: 256 t_cohere infinite			

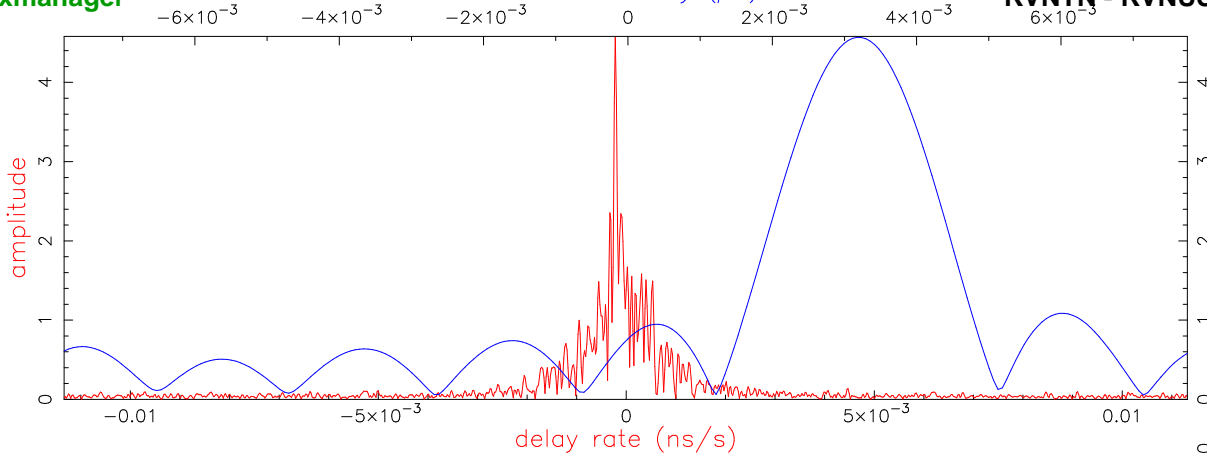
k: az 334.4 el 58.2 pa 135.0 u: az 36.2 el 28.1 pa -67.5 u,v (fr/asec) 10519.956 -6379.808 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/ku..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/ku.W.233.1HRBHI

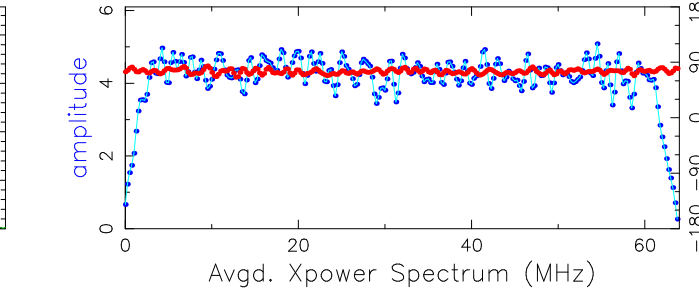
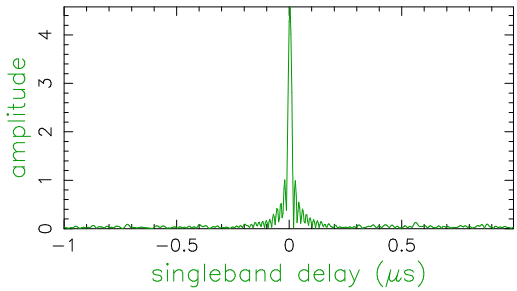


multiband delay ( $\mu$ s)

Fringe quality 5

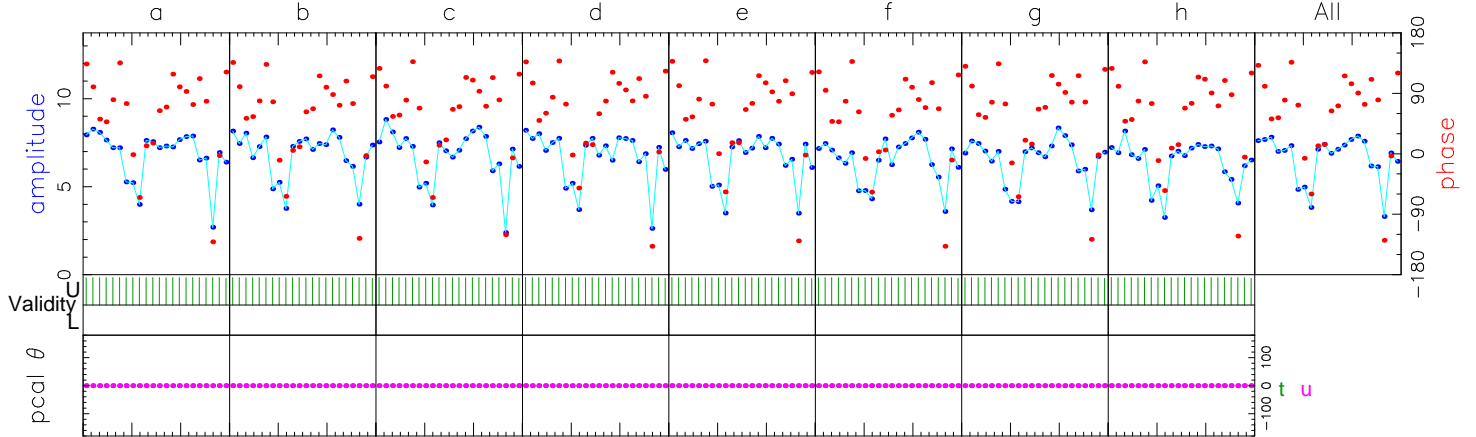


SNR 168.0  
Int time 179.976  
Amp 4.581  
Phase 76.2  
PFD 0.0e+00  
Delays (us)  
SBD 0.003302  
MBD 0.003197  
Fringe rate (Hz)  
-0.019318  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512



Exp. c202a  
Exper # 16383  
Yr:day 2020:283  
Start 090000.00  
Stop 090300.22  
FRT 090130.00  
Corr/FF/build  
2021:006:172908  
2021:010:134809  
2020:247:085004  
RA & Dec (J2000)  
01h02m45.762375s  
+58°24'11.136621"

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



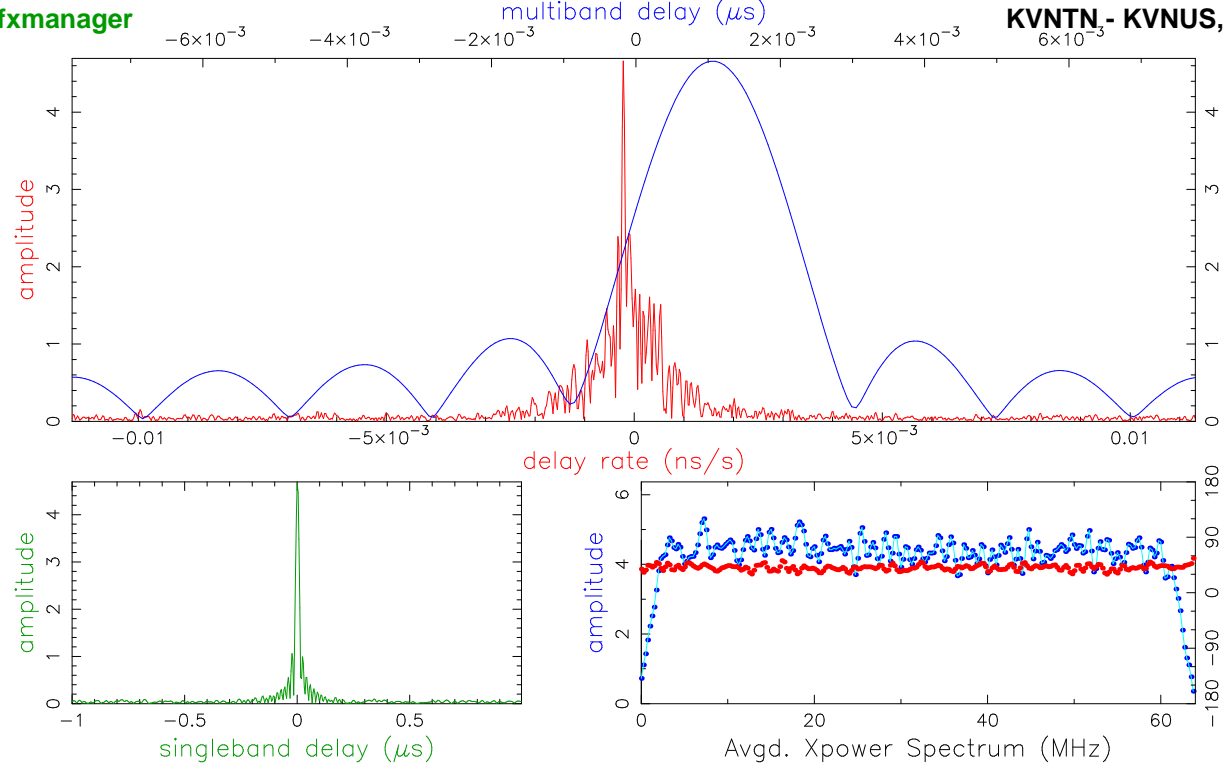
	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
t	1000	1000	1000	1000	1000	1000	1000	1000		
u	1000	1000	1000	1000	1000	1000	1000	1000		
t:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
tu	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0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

Group delay (usec)(sbd)	-1.05225959079E+03	Apriori delay (usec)	-1.05226278823E+03	Resid mbdelay (usec)	3.19744E-03	+/-	6.5E-06
Sband delay (usec)	-1.05225948598E+03	Apriori clock (usec)	-1.1482267E+00	Resid sbdelay (usec)	3.30225E-03	+/-	5.1E-05
Phase delay (usec)	-1.05226278578E+03	Apriori clockrate (us/s)	-2.9999999E-07	Resid phdelay (usec)	2.45742E-06	+/-	2.2E-08
Delay rate (us/s)	1.54794986154E-02	Apriori rate (us/s)	1.54797228795E-02	Resid rate (us/s)	-2.24264E-07	+/-	2.1E-10
Total phase (deg)	-132.1	Apriori accel (us/s/s)	2.46816574583E-06	Resid phase (deg)	76.2	+/-	0.7

ph/seg (deg)	59.6	RMS	1.6	Theor.	4.581 +/- 0.027	Amplitude	4.581 +/- 0.027	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5		
amp/seg (%)	52.9	Search (1024X32)	4.467	Search	4.467	Search	4.467	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000		
ph/frq (deg)	3.1	Inc. seg. avg.	6.646	Inc. seg. avg.	6.646	Inc. seg. avg.	6.646	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008	
amp/frq (%)	3.5	Inc. frq. avg.	4.575	Inc. frq. avg.	4.575	Inc. frq. avg.	4.575	Sample rate (MSamp/s):	128	dr window (ns/s)	-0.011 0.011		
t: az 34.9 el 24.9 pa -66.3		u: az 36.2 el 28.1 pa -67.5		u, v (fr/asec)	-167.525 167.137			Data rate (Mb/s):	2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00 0.00

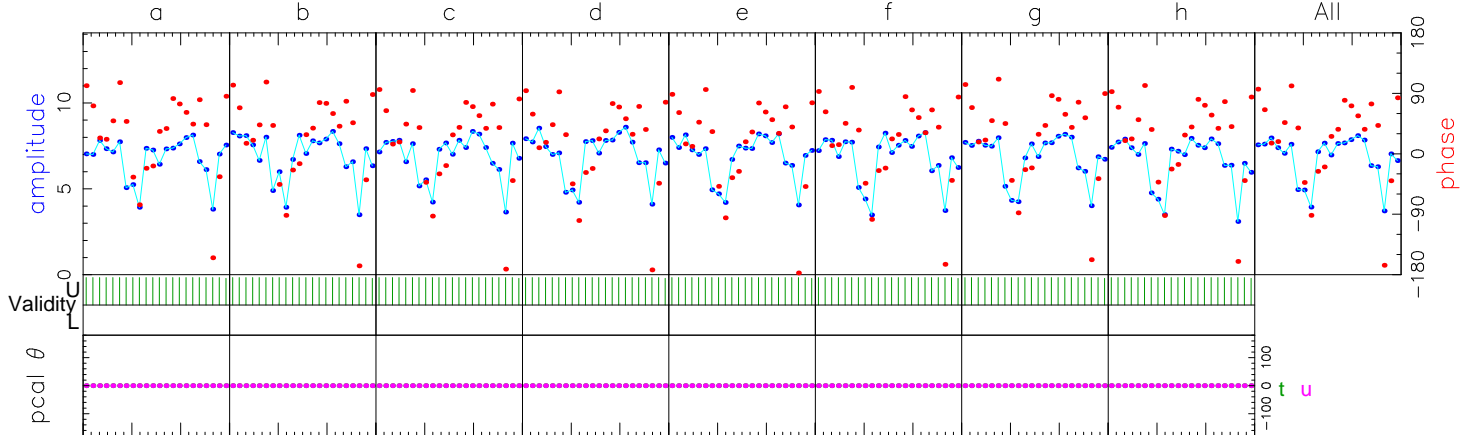
Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/tu..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/tu.W.350.1HRBHI

simultaneous interpolator



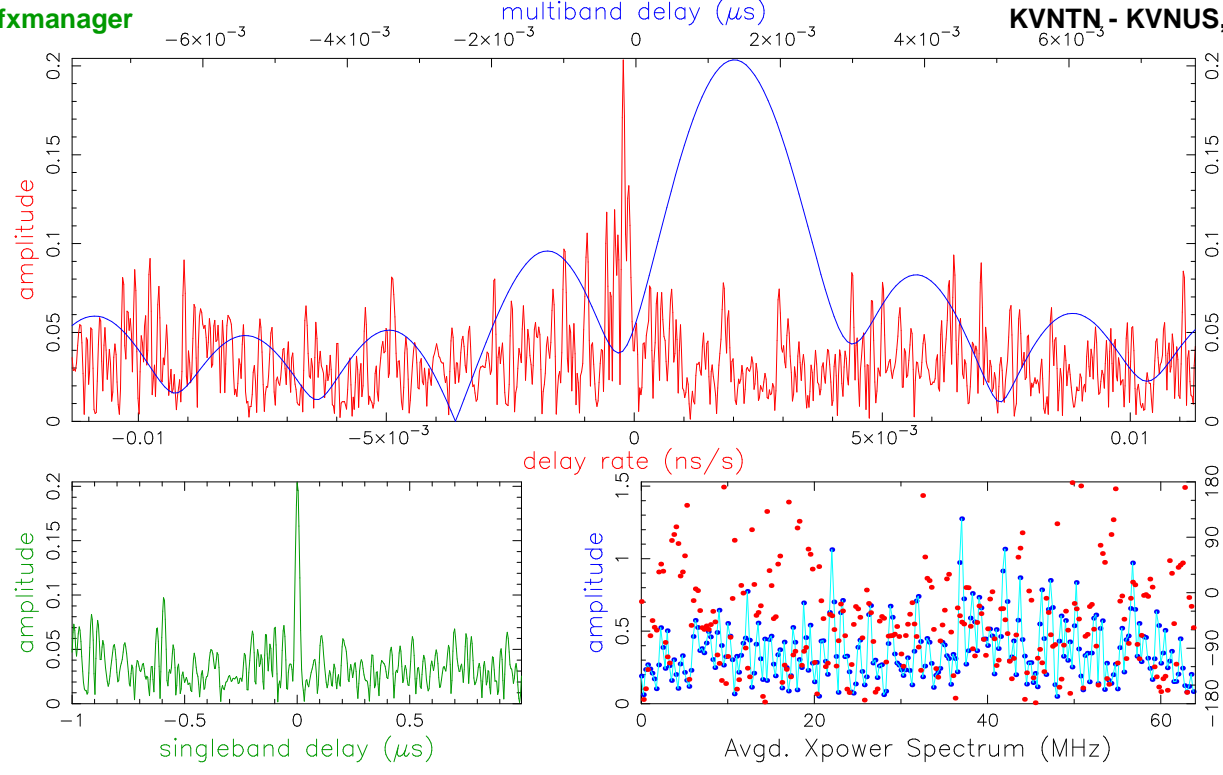
Fringe quality 5  
SNR 172.2  
Int time 179.976  
Amp 4.695  
Phase 40.8  
PFD 0.0e+00  
Delays (us)  
SBD 0.001089  
MBD 0.001062  
Fringe rate (Hz)  
-0.019269  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512  
Exp. c202a  
Exper # 16383  
Yr:day 2020:283  
Start 090000.00  
Stop 090300.22  
FRT 090130.00  
Corr/FF/build  
2021:006:172908  
2021:010:134811  
2020:247:085004  
RA & Dec (J2000)  
01h02m45.762375s  
+58°24'11.136621"

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		
t	1000	1000	1000	1000	1000	1000	1000	1000	APs used	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
t:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
tu	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
t	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
u	1000	1000	1000	1000	1000	1000	1000	1000		
t	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	-1.05226172626E+03								1.06197E-03	+/- 6.3E-06
Sband delay (usec)	-1.05226169898E+03								1.08925E-03	+/- 5.0E-05
Phase delay (usec)	-1.05226278692E+03								1.31437E-06	+/- 2.1E-08
Delay rate (us/s)	1.54794991808E-02								-2.23699E-07	+/- 2.1E-10
Total phase (deg)			-167.5						40.8	+/- 0.7
			Apriori delay (usec)						Resid mbdelay (usec)	
			Apriori clock (usec)						Resid sbdelay (usec)	
			Apriori clockrate (us/s)						Resid phdelay (usec)	
			Apriori rate (us/s)						Resid rate (us/s)	
			Apriori accel (us/s/s)						Resid phase (deg)	
ph/seg (deg)	59.2	1.6	Search (1024X32)	4.618					PCal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
amp/seg (%)	52.6	2.7	Interp.	0.000					PCal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
ph/frq (deg)	4.3	0.9	Inc. seg. avg.	6.817					Bits/sample: 2x2	SampCntNorm: enabled
amp/frq (%)	1.6	1.6	Inc. frq. avg.	4.670					Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
									Data rate(Mb/s): 2048	ion window (TEC) 0.00 0.00
									lags: 256	t_cohere infinite

t: az 34.9 el 24.9 pa -66.3 u: az 36.2 el 28.1 pa -67.5 u,v (fr/asec) -167.525 167.137 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/tu..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/tu.W.367.1HRBHI

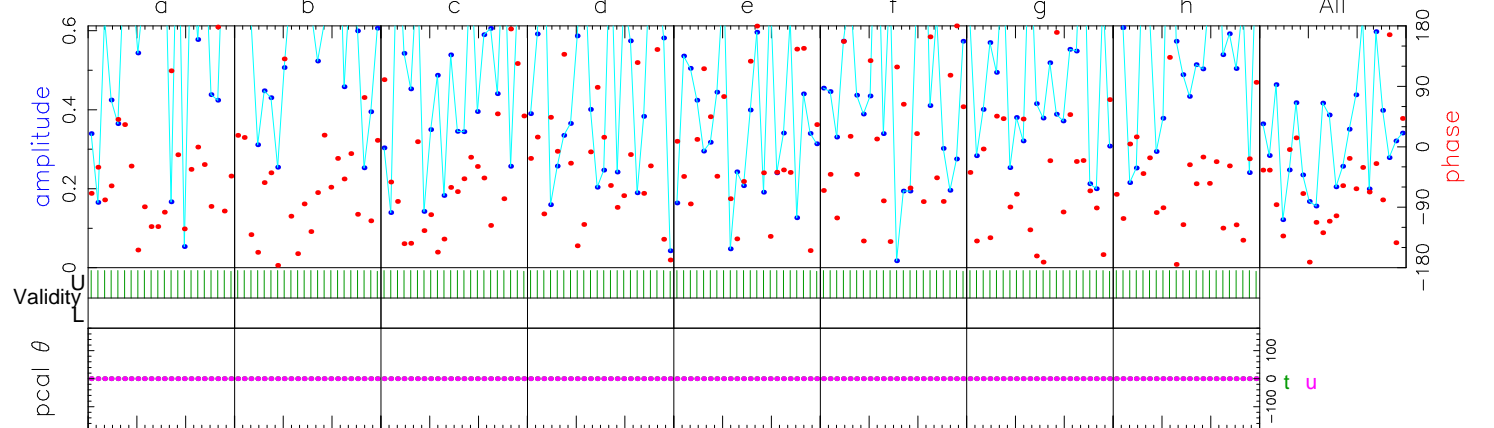


Fringe quality 9

SNR 7.5  
Int time 179.976  
Amp 0.204  
Phase -60.7  
PFD 1.1e-05  
Delays (us)  
SBD 0.000933  
MBD 0.001342  
Fringe rate (Hz) -0.019384  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512

Exp. c202a  
Exper # 16383  
Yr:day 2020:283  
Start 090000.00  
Stop 090300.22  
FRT 090130.00  
Corr/FF/build  
2021:006:172908  
2021:010:134813  
2020:247:085004  
RA & Dec (J2000)  
01h02m45.762375s  
+58°24'11.136621"

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

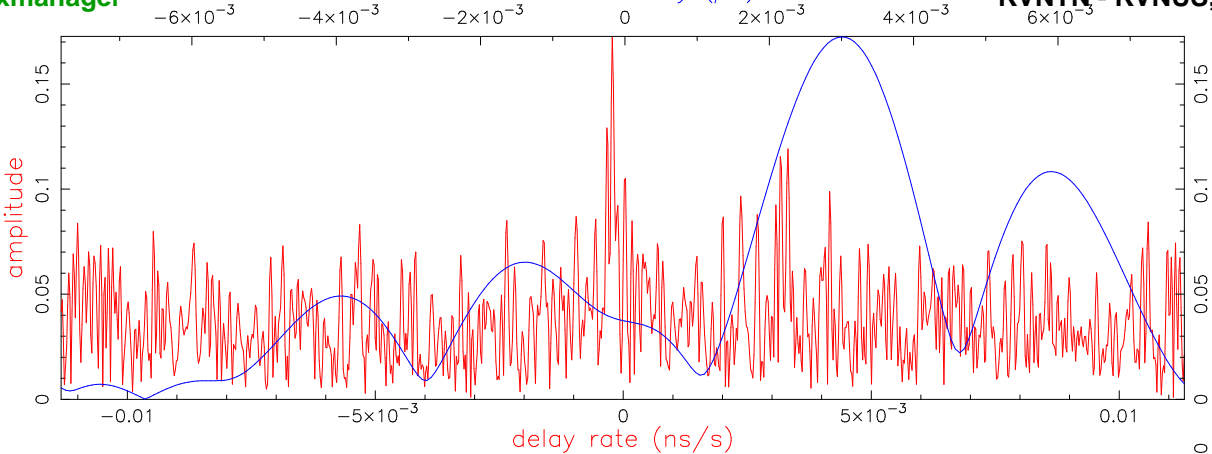


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
t	1000	1000	1000	1000	1000	1000	1000	1000		
u	1000	1000	1000	1000	1000	1000	1000	1000		
t:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
tu	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
t	1000	1000	1000	1000	1000	1000	1000	1000		
u	1000	1000	1000	1000	1000	1000	1000	1000		
t	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)	-1.05226144592E+03				-1.05226278823E+03				1.34232E-03	+/- 1.4E-04
Sband delay (usec)	-1.05226185498E+03				-1.1482267E+00				9.33250E-04	+/- 1.2E-03
Phase delay (usec)	-1.05226279019E+03				-2.9999999E-07				-1.95773E-06	+/- 4.9E-07
Delay rate (us/s)	1.54794978516E-02				1.54797228795E-02				-2.25028E-07	+/- 4.7E-09
Total phase (deg)			-269.0		2.46816574583E-06				-60.7	+/- 15.3
	RMS	Theor.	Amplitude	0.204 +/- 0.027	Pcal mode: MANUAL, MANUAL				PC period (AP's) 5, 5	
ph/seg (deg)	59.8	35.9	Search (1024X32)	0.202	Pcal rate: 0.000E+00, 0.000E+00 (us/s)				sb window (us)	-1.000 1.000
amp/seg (%)	89.3	62.6	Interp.	0.000	Bits/sample: 2x2				SampCntNorm: enabled	mb window (us) -0.008 0.008
ph/frq (deg)	8.2	21.6	Inc. seg. avg.	0.277	Sample rate(MISamp/s): 128				dr window (ns/s)	-0.011 0.011
amp/frq (%)	45.7	37.8	Inc. frq. avg.	0.191	Data rate(Mb/s): 2048				nlags: 256 t_cohere infinite	ion window (TEC) 0.00 0.00

t: az 34.9 el 24.9 pa -66.3      u: az 36.2 el 28.1 pa -67.5      u,v (fr/asec) -167.525 167.137      simultaneous interpolator

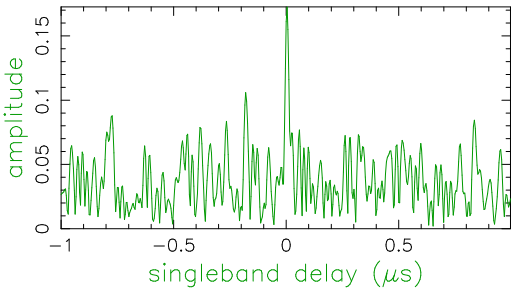
Control file: cf\_1234\_gmva      Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/tu..1HRBHI      Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/tu.W.385.1HRBHI

multiband delay ( $\mu$ s)

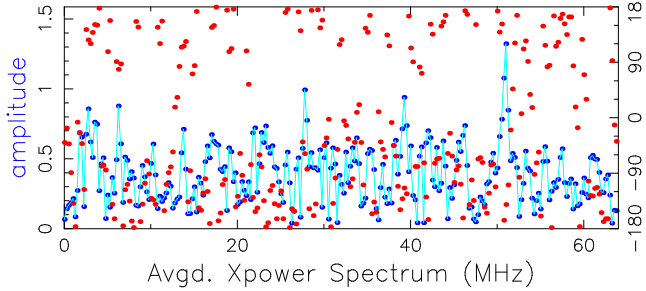


Fringe quality 0

SNR 6.3  
 Int time 179.976  
 Amp 0.173  
 Phase -149.4  
 PFD 3.2e-02  
 Delays (us)  
 SBD 0.003467  
 MBD 0.003007  
 Fringe rate (Hz)  
 -0.018851  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

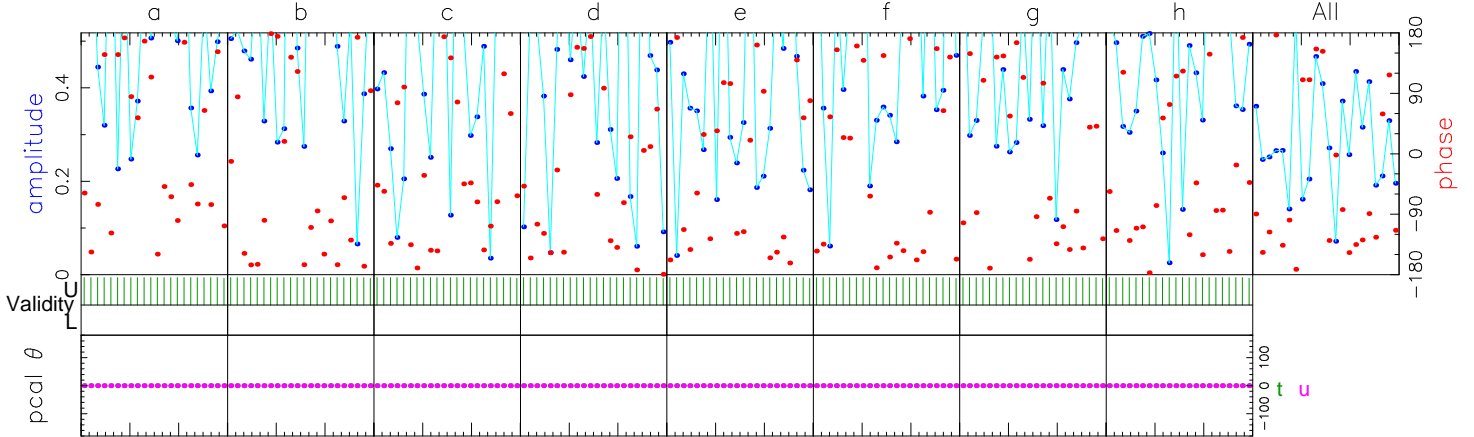


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134815  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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
	-139.3	-158.6	-121.9	-120.5	-167.1	-179.0	-145.0	-118.8	Phase	-149.4
	0.2	0.3	0.1	0.1	0.1	0.3	0.2	0.2	Ampl.	0.2
	492.0	257.5	65.8	322.7	468.9	257.9	471.5	165.9	Sbd box	257.9
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
t	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
t:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
tu	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
t	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
u	1000	1000	1000	1000	1000	1000	1000	1000		
t	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-1.05225978129E+03			Apriori delay (usec)	-1.05226278823E+03			Resid mbdelay (usec)	3.00694E-03	+/- 1.7E-04
Sband delay (usec)	-1.05225932073E+03			Apriori clock (usec)	-1.1482267E+00			Resid sbdelay (usec)	3.46750E-03	+/- 1.4E-03
Phase delay (usec)	-1.05226279305E+03			Apriori clockrate (us/s)	-2.9999999E-07			Resid phdelay (usec)	-4.81687E-06	+/- 5.8E-07
Delay rate (us/s)	1.54795040344E-02			Apriori rate (us/s)	1.54797228795E-02			Resid rate (us/s)	-2.18845E-07	+/- 5.6E-09
Total phase (deg)			-357.6	Apriori accel (us/s/s)	2.46816574583E-06			Resid phase (deg)	-149.4	+/- 18.1

	RMS	Theor.	Amplitude	0.173 +/- 0.027	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
ph/seg (deg)	67.5	42.4	Search (1024X32)	0.171	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
amp/seg (%)	95.8	74.1	Interp.	0.000	Bits/sample: 2x2	mb window (us) -0.008 0.008
ph/frq (deg)	25.6	25.6	Inc. seg. avg.	0.228	Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
amp/frq (%)	43.9	44.7	Inc. frq. avg.	0.169	Data rate(Mb/s): 2048	ion window (TEC) 0.00 0.00
					nlags: 256	t_cohere infinite

t: az 34.9 el 24.9 pa -66.3 u: az 36.2 el 28.1 pa -67.5 u,v (fr/asec) -167.525 167.137 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/tu..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/tu.W.403.1HRBHI

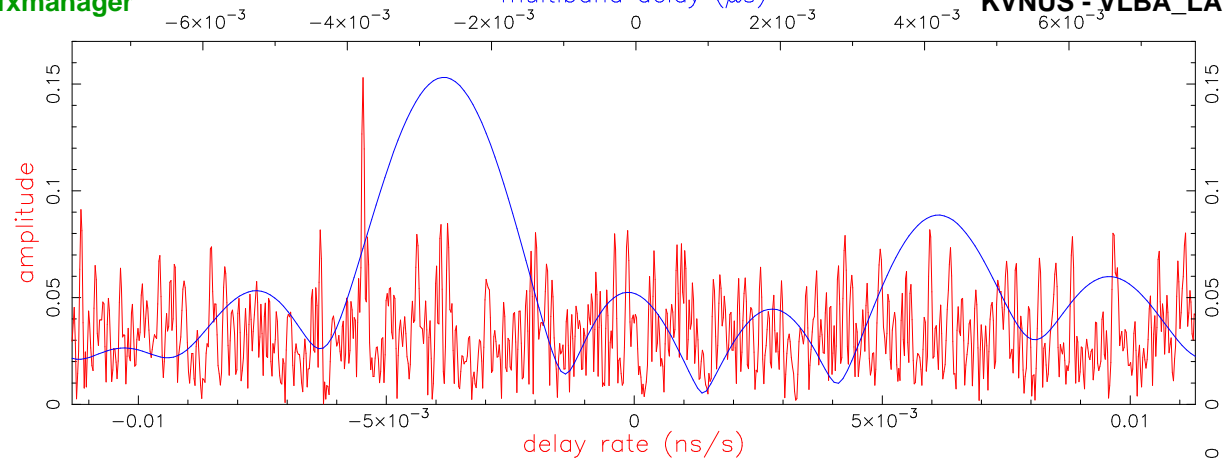
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, ul

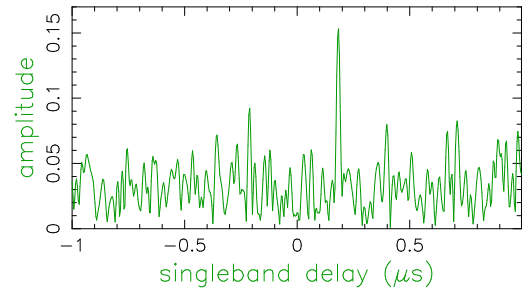
KVNUS - VLBA\_LA, fgroup W, pol LL

multiband delay ( $\mu$ s)

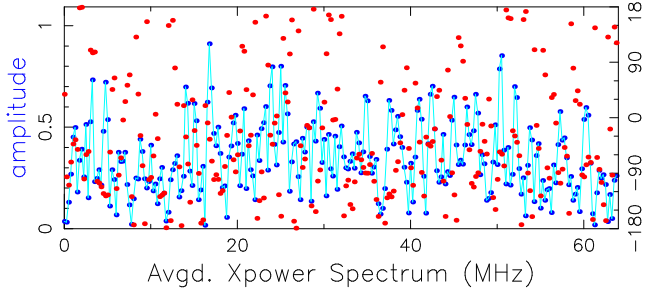


Fringe quality 0

SNR 5.7  
 Int time 179.975  
 Amp 0.170  
 Phase -105.8  
 PFD 8.5e-01  
 Delays (us)  
 SBD 0.182493  
 MBD -0.002703  
 Fringe rate (Hz)  
 -0.472400  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

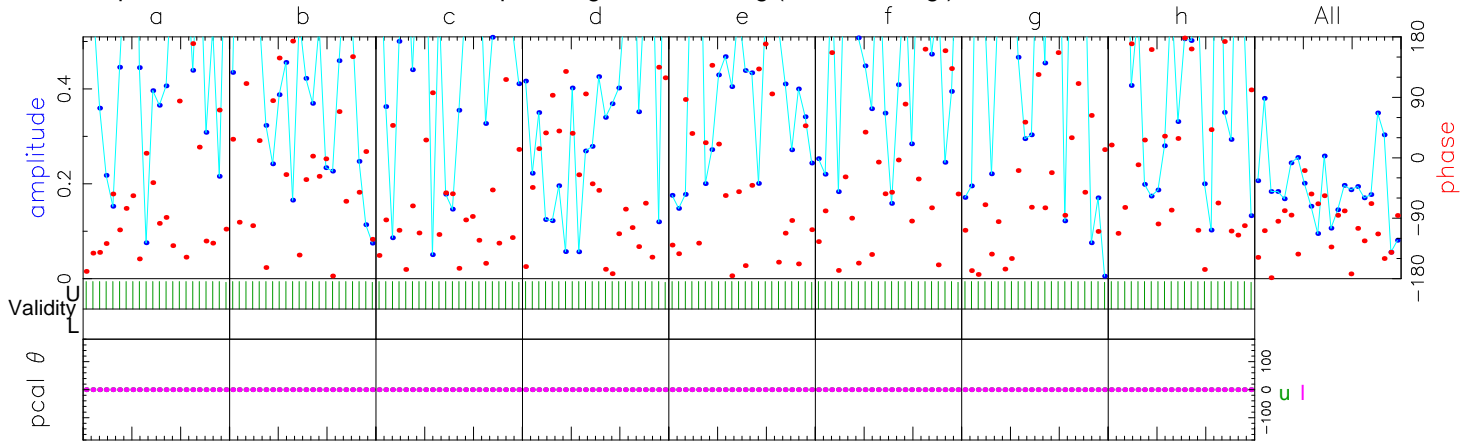


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134812  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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
	-112.7	-57.9	-112.1	-113.4	-129.6	-81.7	-126.7	-94.3	Phase	-105.8
	0.3	0.1	0.3	0.1	0.1	0.1	0.1	0.2	Ampl.	0.2
	303.5	164.9	304.7	496.1	462.8	248.1	508.7	324.9	Sbd box	303.7
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
l	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:l	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:l	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
l	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
l	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd)	-8.21754802928E+03	Apriori delay (usec)	-8.21773282637E+03	Resid mbdelay (usec)	-2.70291E-03	+/-	1.9E-04
Sband delay (usec)	-8.21755033337E+03	Apriori clock (usec)	2.9090452E+00	Resid sbdelay (usec)	1.82493E-01	+/-	1.5E-03
Phase delay (usec)	-8.21773282978E+03	Apriori clockrate (us/s)	5.0000000E-07	Resid phdelay (usec)	-3.41188E-06	+/-	6.5E-07
Delay rate (us/s)	1.00372765201E+00	Apriori rate (us/s)	1.00373313610E+00	Resid rate (us/s)	-5.48409E-06	+/-	6.3E-09
Total phase (deg)		Apriori accel (us/s/s)	4.33838706856E-05	Resid phase (deg)	-105.8	+/-	20.3

ph/seg (deg)	40.2	Theor.	47.5	Amplitude	0.170 +/- 0.030	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000
amp/seg (%)	57.7		83.0	Search (1024X32)	0.147	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		mb window (us)	-0.008	0.008
ph/frq (deg)	26.3		28.7	Inc. seg. avg.	0.161	Bits/sample: 2x2	SampCntNorm: enabled	dr window (ns/s)	-0.011	0.011
amp/frq (%)	51.9		50.0	Inc. frq. avg.	0.158	Sample rate(MISamp/s): 128		ion window (TEC)	0.00	0.00
						Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite		

u: az 36.2 el 28.1 pa -67.5 l: az 327.9 el 59.4 pa 124.8 u,v (fr/asec) -10969.841 5595.935 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/ul..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/ul.W.376.1HRBHI

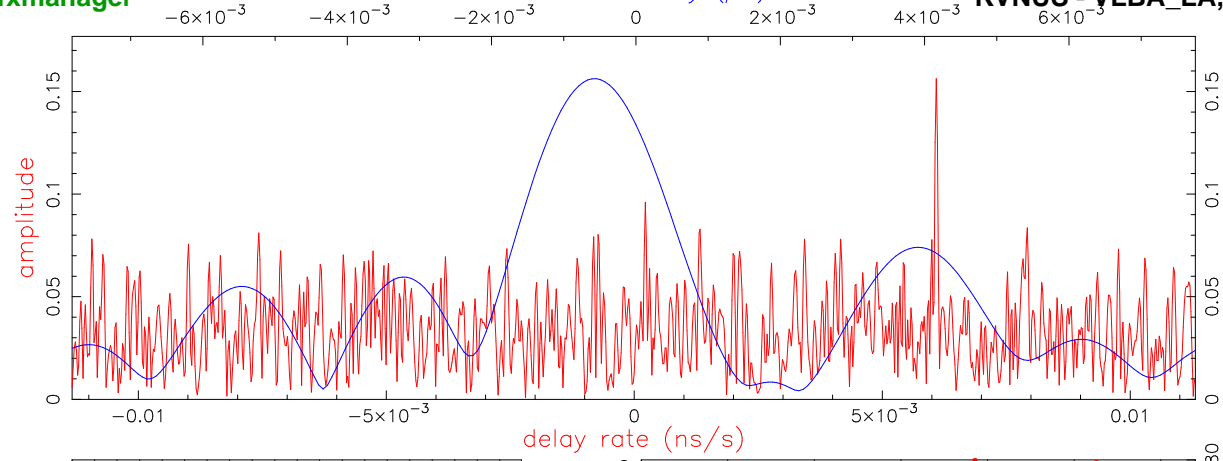
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, ul

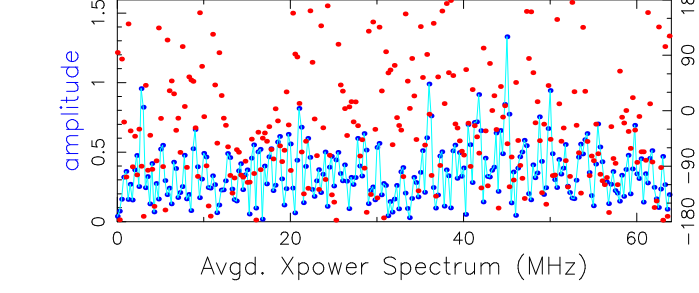
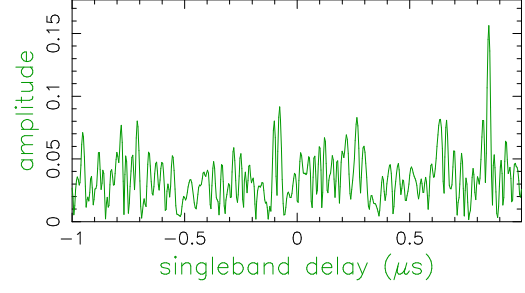
KVNUS - VLBA\_LA, fgroup W, pol RR

multiband delay ( $\mu$ s)



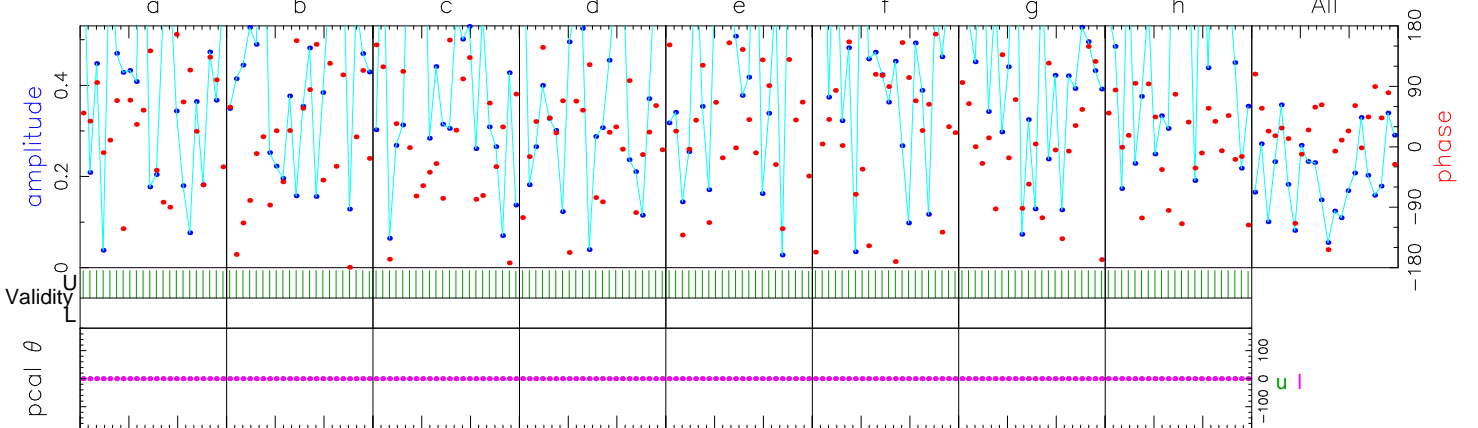
Fringe quality 0

SNR 5.7  
 Int time 179.975  
 Amp 0.177  
 Phase 32.6  
 PFD 6.8e-01  
 Delays (us)  
 SBD 0.850973  
 MBD -0.000596  
 Fringe rate (Hz)  
 0.524715  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134814  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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		
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
l	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:l	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:l	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
l	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
l	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-8.21687404746E+03									
Sband delay (usec)	-8.21688185287E+03									
Phase delay (usec)	-8.21773282532E+03									
Delay rate (us/s)	1.00373922753E+00									
Total phase (deg)		-206.2								
			Apriori delay (usec)	-8.21773282637E+03	Resid mbdelay (usec)	-5.96096E-04	+/-	1.9E-04		
			Apriori clock (usec)	2.9090452E+00	Resid sbdelay (usec)	8.50973E-01	+/-	1.5E-03		
			Apriori clockrate (us/s)	5.0000000E-07	Resid phdelay (usec)	1.05265E-06	+/-	6.4E-07		
			Apriori rate (us/s)	1.00373313610E+00	Resid rate (us/s)	6.09143E-06	+/-	6.2E-09		
			Apriori accel (us/s/s)	4.33838706856E-05	Resid phase (deg)	32.6	+/-	19.9		
ph/seg (deg)	58.7	46.8	Search (1024X32)	0.153	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5				
amp/seg (%)	59.7	81.7	Interp.	0.000	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000	1.000		
ph/frq (deg)	24.8	28.2	Inc. seg. avg.	0.171	Bits/sample: 2x2	SampCntNorm: enabled	mb window (us)	-0.008	0.008	
amp/frq (%)	37.6	49.2	Inc. frq. avg.	0.165	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
u: az 36.2 el 28.1 pa -67.5		l: az 327.9 el 59.4 pa 124.8		u, v (fr/asec)	-10969.841 5595.935					simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/ul..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/ul.W.397.1HRBHI



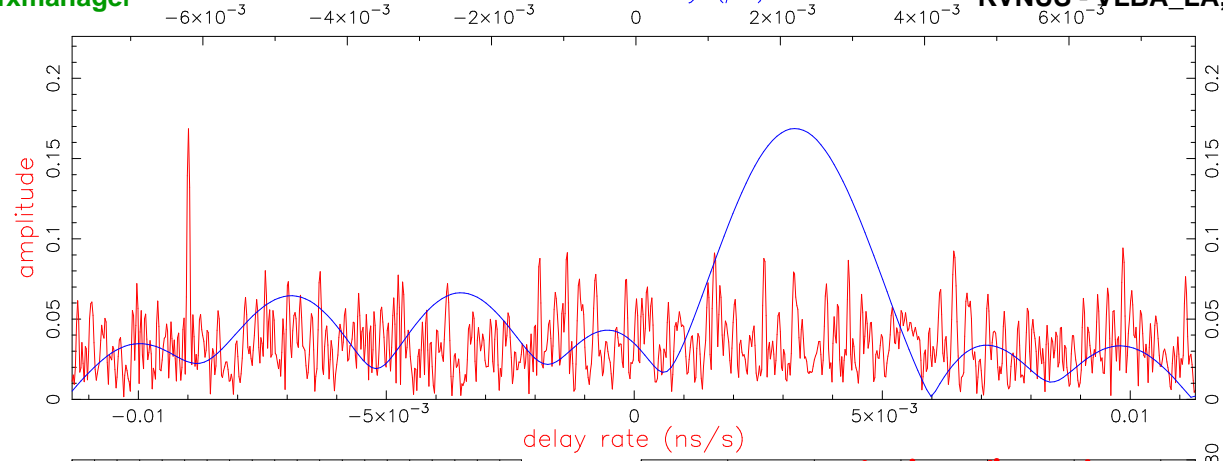
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

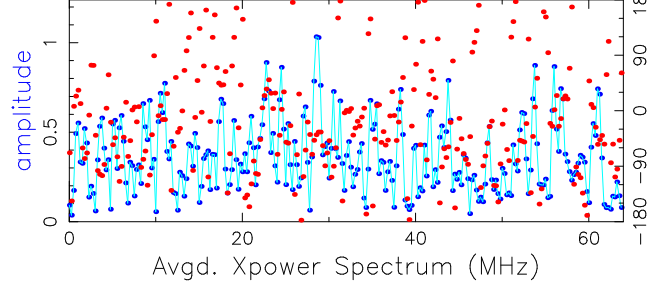
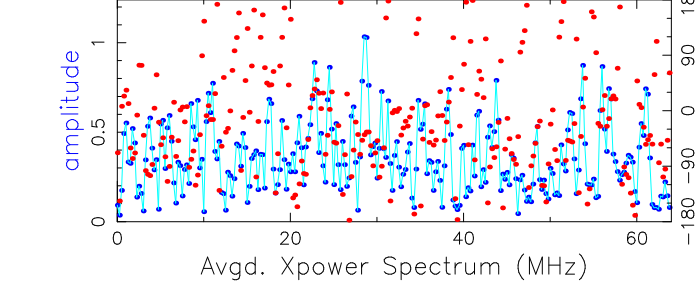
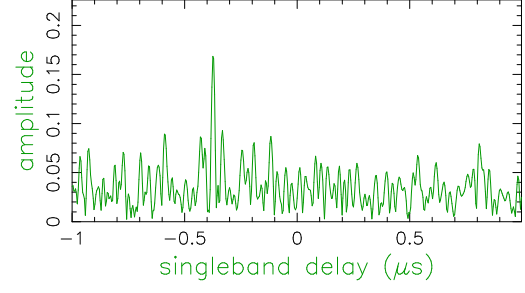
0102+584.1HRBHI, No0113, ul

KVNUS - VLBA\_LA, fgroup W, pol RL

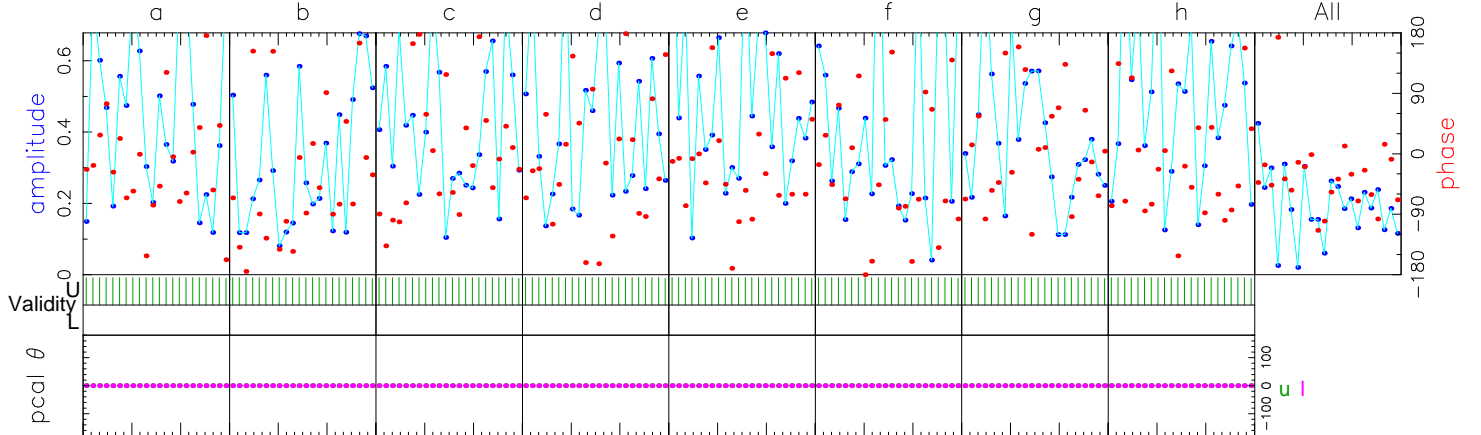
multiband delay ( $\mu$ s)



Fringe quality 0  
 SNR 6.3  
 Int time 179.975  
 Amp 0.226  
 Phase -40.0  
 PFD 3.8e-02  
 Delays (us)  
 SBD -0.373319  
 MBD 0.002249  
 Fringe rate (Hz)  
 -0.775165  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134818  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"



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		
u	1000	1000	1000	1000	1000	1000	1000	1000		
l	1000	1000	1000	1000	1000	1000	1000	1000		
u:l	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u:l	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u	1000	1000	1000	1000	1000	1000	1000	1000		
l	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
l	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		

Group delay (usec)(sbd)	-8.21810557768E+03	Apriori delay (usec)	-8.21773282637E+03	Resid mbdelay (usec)	2.24869E-03	+/-	1.7E-04
Sband delay (usec)	-8.21810614537E+03	Apriori clock (usec)	2.9090452E+00	Resid sbdelay (usec)	-3.73319E-01	+/-	1.4E-03
Phase delay (usec)	-8.21773282766E+03	Apriori clockrate (us/s)	5.0000000E-07	Resid phdelay (usec)	-1.28918E-06	+/-	5.9E-07
Delay rate (us/s)	1.00372413721E+00	Apriori rate (us/s)	1.00373313610E+00	Resid rate (us/s)	-8.99889E-06	+/-	5.6E-09
Total phase (deg)	-278.8	Apriori accel (us/s/s)	4.33838706856E-05	Resid phase (deg)	-40.0	+/-	18.2

ph/seg (deg)	46.1	Theor.	42.6	Amplitude	0.226 +/- 0.036	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5		
amp/seg (%)	56.9	Search (1024X32)	0.160	Interp.	0.000	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000		
ph/frq (deg)	20.8	Inc. seg. avg.	0.202	Inc. frq. avg.	0.210	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008	
amp/frq (%)	28.5	Inc. frq. avg.	0.210			Sample rate (MSamp/s):	128	dr window (ns/s)	-0.011 0.011		
u: az 36.2 el 28.1 pa -67.5		l: az 327.9 el 59.4 pa 124.8		u,v (fr/asec)	-10969.841 5595.935	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/c202a/v1/v1\_3mm/1234/No0113/ul..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/ul.W.420.1HRBHI simultaneous interpolator



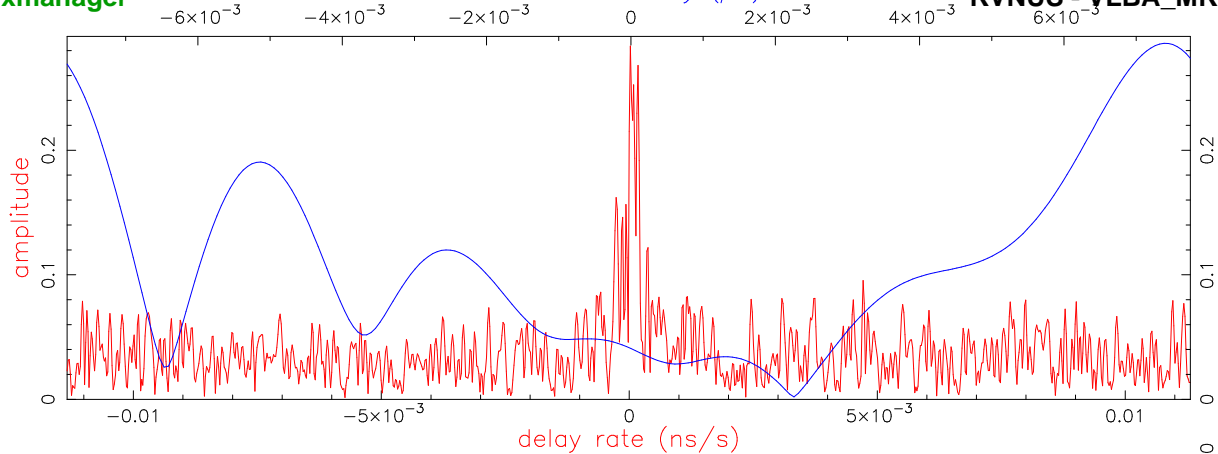
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, um

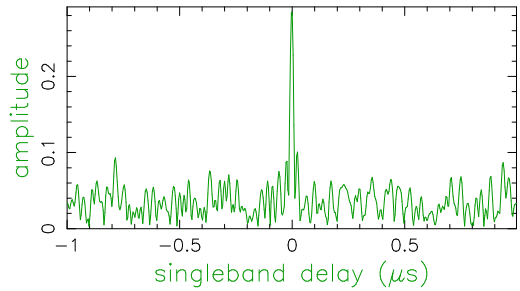
KVNUS - VLBA\_MK, fgroup W, pol LL

multiband delay ( $\mu$ s)

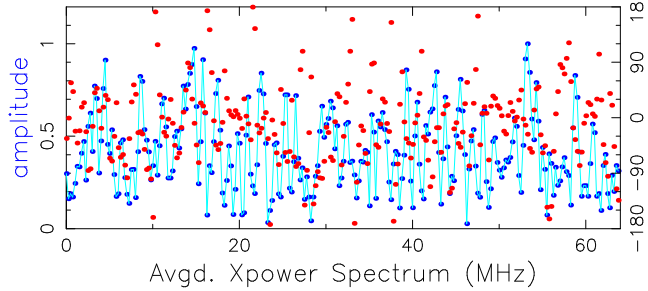


Fringe quality 9

SNR 10.7  
 Int time 179.977  
 Amp 0.291  
 Phase -121.3  
 PFD 2.6e-18  
 Delays (us)  
 SBD -0.002019  
 MBD 0.007252  
 Fringe rate (Hz)  
 0.001114  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

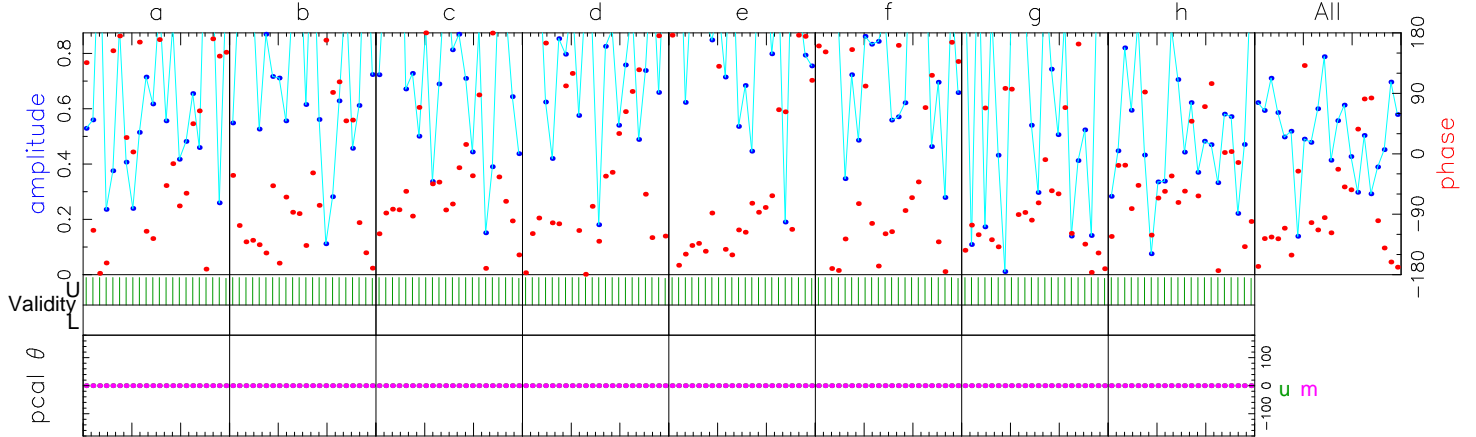


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134813  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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
	-173.8	-107.4	-74.0	-134.6	-141.1	-165.7	-118.4	-42.0	Phase	-121.3
	0.3	0.4	0.5	0.3	0.5	0.4	0.3	0.3	Ampl.	0.4
	259.2	257.2	256.6	256.0	256.9	256.5	257.3	258.8	Sbd box	256.5
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
m	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:m	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:m	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
m	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
m	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-6.07063865257E+03		Apriori delay (usec)		-6.07063027965E+03		Resid mbdelay (usec)		7.25208E-03	+/- 1.0E-04
Sband delay (usec)	-6.07063229865E+03		Apriori clock (usec)		-1.0836773E+01		Resid sbdelay (usec)		-2.01900E-03	+/- 8.1E-04
Phase delay (usec)	-6.07063028356E+03		Apriori clockrate (us/s)		2.9999999E-07		Resid phdelay (usec)		-3.91181E-06	+/- 3.5E-07
Delay rate (us/s)	4.27767437585E-01		Apriori rate (us/s)		4.27767424652E-01		Resid rate (us/s)		1.29326E-08	+/- 3.3E-09
Total phase (deg)			Apriori accel (us/s/s)		5.55022756808E-05		Resid phase (deg)		-121.3	+/- 10.7

ph/seg (deg) 74.8 25.1 Search (1024X32) 0.275 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 90.5 43.9 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 48.4 15.2 Inc. seg. avg. 0.466 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 40.9 26.5 Inc. frq. avg. 0.350 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 u: az 36.2 el 28.1 pa -67.5 m: az 14.3 el 49.1 pa -153.2 u,v (fr/asec) -4645.966 8257.400 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/um..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/um.W.389.1HRBHI

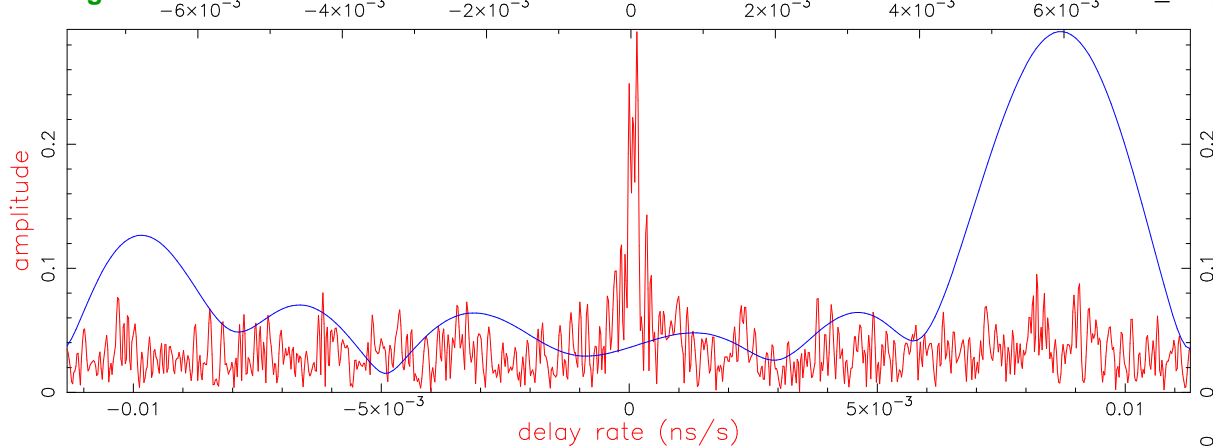
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, um

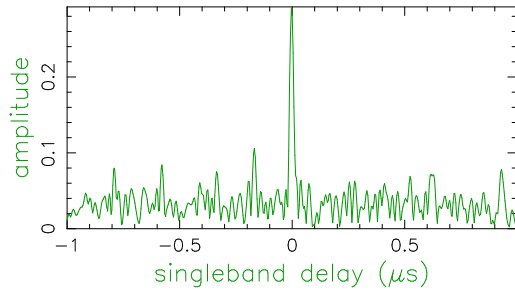
KVNUS - VLBA\_MK, fgroup W, pol RR

multiband delay ( $\mu$ s)

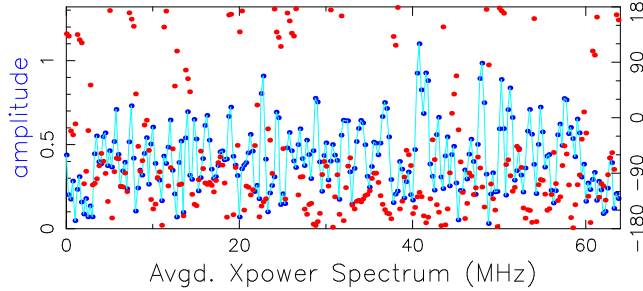


Fringe quality 9

SNR 10.7  
 Int time 179.977  
 Amp 0.293  
 Phase 132.4  
 PFD 1.6e-18  
 Delays (us)  
 SBD -0.002774  
 MBD 0.005998  
 Fringe rate (Hz)  
 0.014066  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

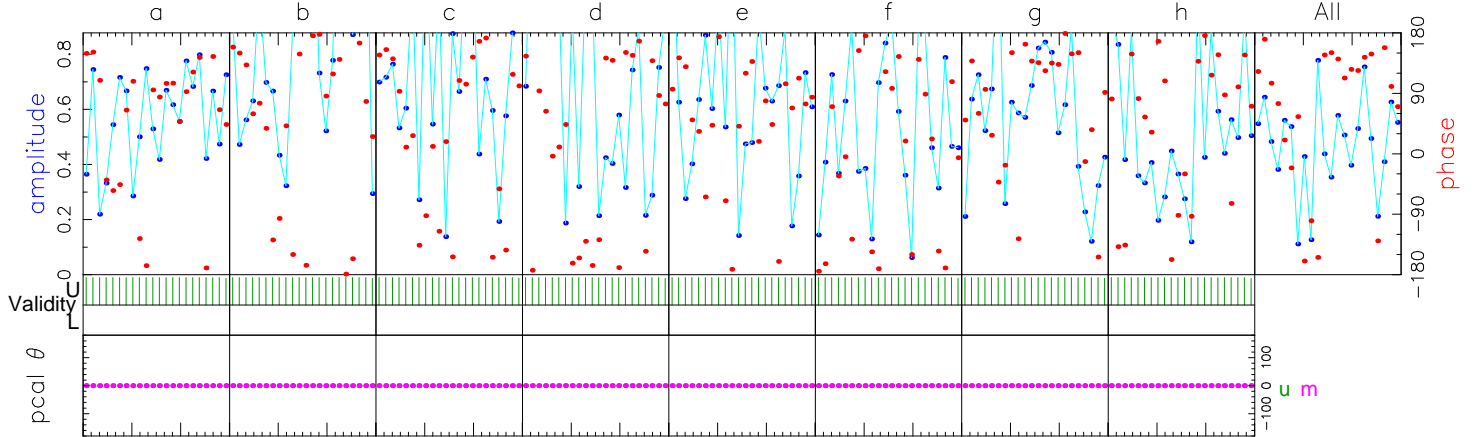


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134815  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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
	110.2	148.0	146.4	142.5	99.1	133.0	129.0	134.7	Phase	132.4
	0.3	0.5	0.3	0.3	0.3	0.2	0.3	0.3	Ampl.	0.3
	258.6	256.2	255.0	255.6	257.6	69.8	257.2	258.9	Sbd box	256.3
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
m	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:m	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:m	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
m	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
m	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

Group delay (usec)(sbd) -6.07063990705E+03 Apriori delay (usec) -6.07063027965E+03 Resid mbdelay (usec) 5.99760E-03 +/- 1.0E-04  
 Sband delay (usec) -6.07063305365E+03 Apriori clock (usec) -1.0836773E+01 Resid sbdelay (usec) -2.77400E-03 +/- 8.0E-04  
 Phase delay (usec) -6.07063027538E+03 Apriori clockrate (us/s) 2.9999999E-07 Resid phdelay (usec) 4.26981E-06 +/- 3.4E-07  
 Delay rate (us/s) 4.27767587948E-01 Apriori rate (us/s) 4.27767424652E-01 Resid rate (us/s) 1.63296E-07 +/- 3.3E-09  
 Total phase (deg) 28.5 Apriori accel (us/s/s) 5.55022756808E-05 Resid phase (deg) 132.4 +/- 10.7

RMS Theor. Amplitude 0.293 +/- 0.027 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 ph/seg (deg) 64.2 25.0 Search (1024X32) 0.281 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 amp/seg (%) 84.7 43.7 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 ph/frq (deg) 19.0 15.1 Inc. seg. avg. 0.434 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 amp/frq (%) 30.3 26.4 Inc. frq. avg. 0.293 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00

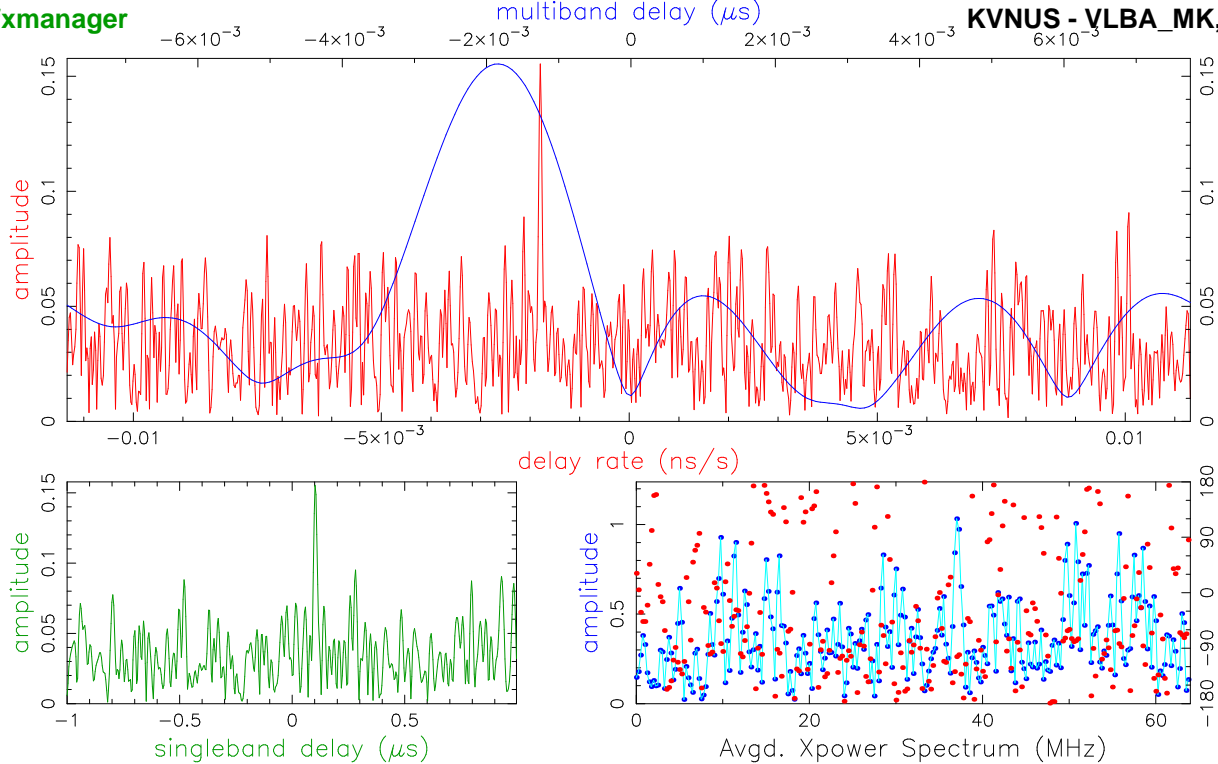
u: az 36.2 el 28.1 pa -67.5 m: az 14.3 el 49.1 pa -153.2 u,v (fr/asec) -4645.966 8257.400 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/um..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/um.W.404.1HRBHI

Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

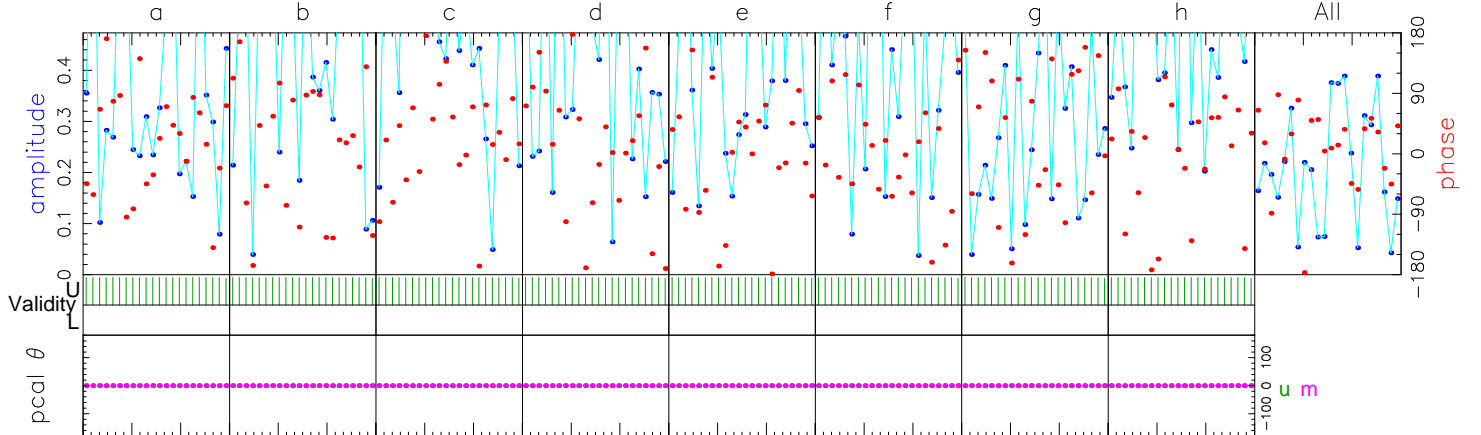
0102+584.1HRBHI, No0113, um

KVNUS - VLBA\_MK, fgroup W, pol LR



Fringe quality 0  
 SNR 5.7  
 Int time 179.977  
 Amp 0.158  
 Phase 23.4  
 PFD 7.2e-01  
 Delays (us)  
 SBD 0.102498  
 MBD -0.001814  
 Fringe rate (Hz)  
 -0.155678  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134817  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All		
	22.9	28.5	26.2	46.9	12.7	-9.3	36.9	34.1	Phase	23.4		
	0.1	0.1	0.3	0.2	0.2	0.2	0.0	0.2	Ampl.	0.1		
	22.9	74.4	452.7	122.5	507.5	393.8	135.9	283.1	Sbd box	283.2		
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used			
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs			
m	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs			
u:m	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase			
u:m	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC			
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp			
m	1000	1000	1000	1000	1000	1000	1000	1000				
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids			
m	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks			
									Tracks			
Group delay (usec)(sbd)	-6.07052271909E+03		Apriori delay (usec)		-6.07063027965E+03		Resid mbdelay (usec)		-1.81445E-03	+/- 1.9E-04		
Sband delay (usec)	-6.07052778165E+03		Apriori clock (usec)		-1.0836773E+01		Resid sbdelay (usec)		1.02498E-01	+/- 1.5E-03		
Phase delay (usec)	-6.07063027889E+03		Apriori clockrate (us/s)		2.9999999E-07		Resid phdelay (usec)		7.54959E-07	+/- 6.5E-07		
Delay rate (us/s)	4.27765617385E-01		Apriori rate (us/s)		4.27767424652E-01		Resid rate (us/s)		-1.80727E-06	+/- 6.2E-09		
Total phase (deg)			Apriori accel (us/s/s)		5.55022756808E-05		Resid phase (deg)		23.4	+/- 20.0		
	RMS	Theor.	Amplitude	0.158 +/- 0.028		Pcal mode: MANUAL, MANUAL		PC period (AP's) 5, 5				
ph/seg (deg)	56.1	46.9	Search (1024X32)	0.148		Pcal rate: 0.000E+00, 0.000E+00 (us/s)		sb window (us)	-1.000	1.000		
amp/seg (%)	80.4	81.9	Interp.	0.000		Bits/sample: 2x2		SampCntNorm: enabled	mb window (us)	-0.008	0.008	
ph/frq (deg)	18.6	28.3	Inc. seg. avg.	0.161		Sample rate(MISamp/s): 128		dr window (ns/s)	-0.011	0.011		
amp/frq (%)	42.5	49.4	Inc. frq. avg.	0.146		Data rate(Mb/s): 2048		nlags: 256	t_cohere infinite	ion window (TEC)	0.00	0.00
u: az 36.2 el 28.1 pa -67.5	m: az 14.3 el 49.1 pa -153.2		u,v (fr/asec) -4645.966 8257.400						simultaneous interpolator			
Control file: cf_1234_gmva	Input file: /Exps/c202a/v1/v1_3mm/1234/No0113/um..1HRBHI		Output file: /Exps/c202a/v1/v1_3mm/1234/No0113/um.W.413.1HRBHI									

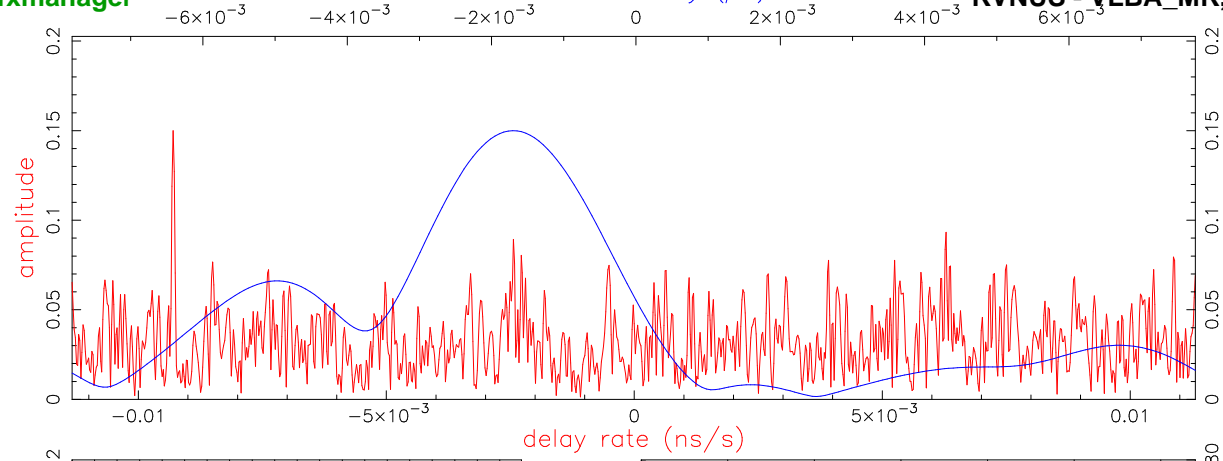
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

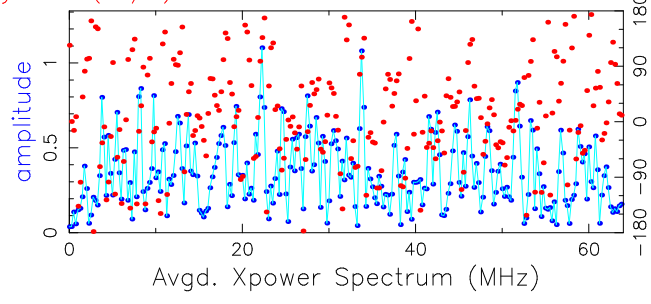
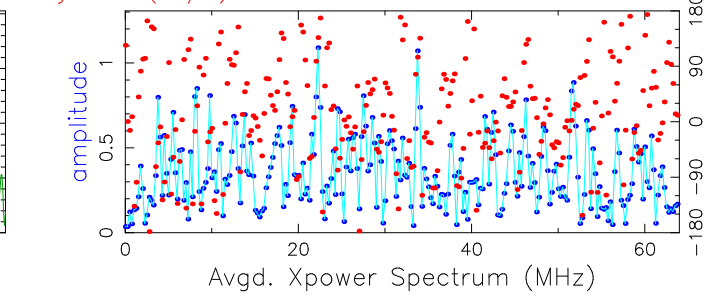
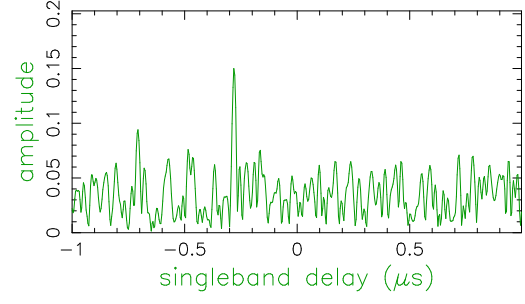
0102+584.1HRBHI, No0113, um

KVNUS - VLBA\_MK, fgroup W, pol RL

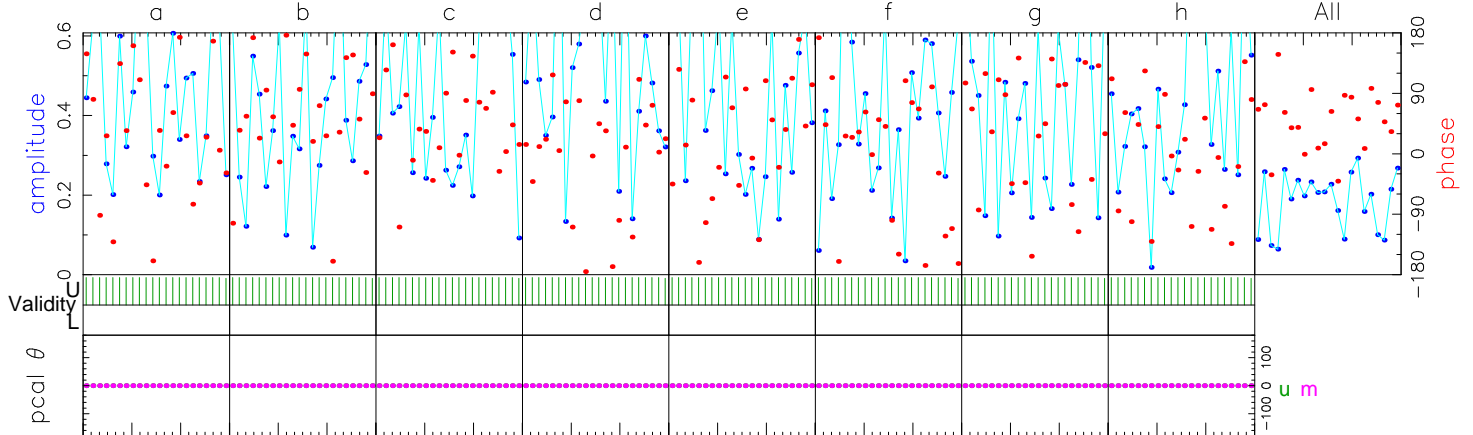
multiband delay ( $\mu$ s)



Fringe quality 0  
 SNR 5.5  
 Int time 179.977  
 Amp 0.203  
 Phase 51.1  
 PFD 9.8e-01  
 Delays (us)  
 SBD -0.280229  
 MBD -0.001670  
 Fringe rate (Hz)  
 -0.802936  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134819  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"



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		
u	1000	1000	1000	1000	1000	1000	1000	1000		
m	1000	1000	1000	1000	1000	1000	1000	1000		
u:m	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u:m	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u	1000	1000	1000	1000	1000	1000	1000	1000		
m	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
m	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	-6.07091319933E+03									
Sband delay (usec)	-6.07091050840E+03									
Phase delay (usec)	-6.07063027800E+03									
Delay rate (us/s)	4.27758103358E-01									
Total phase (deg)			-52.8							
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										
sb window (us)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
PC period (AP's) 5, 5										
SampCntNorm: enabled										
nlags: 256 t_cohere infinite										
simultaneous interpolator										

ph/seg (deg) 43.4 48.6 Search (1024X32) 0.148 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 51.9 84.8 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 22.0 29.3 Inc. seg. avg. 0.183 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 45.4 51.1 Inc. frq. avg. 0.188 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 u: az 36.2 el 28.1 pa -67.5 m: az 14.3 el 49.1 pa -153.2 u,v (fr/asec) -4645.966 8257.400 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/um..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/um.W.426.1HRBHI

Mk4/DiFX fourfit 3.21 rev 2937

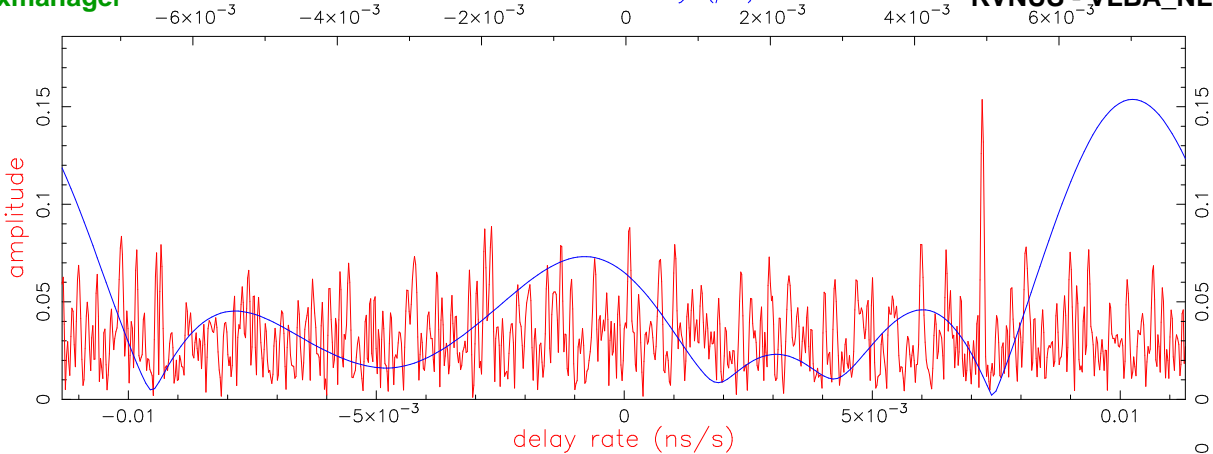
fxmanager

0102+584.1HRBHI, No0113, un

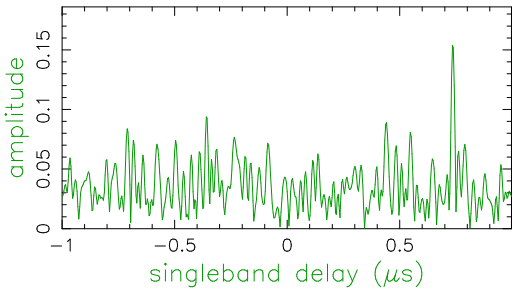
KVNUS - VLBA\_NL, fgroup W, pol LL

multiband delay ( $\mu$ s)

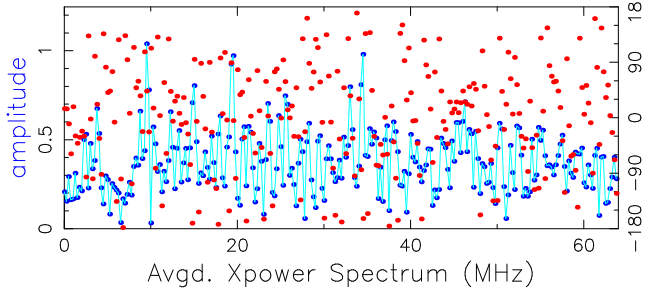
Fringe quality 0



SNR 5.7  
 Int time 179.976  
 Amp 0.186  
 Phase 135.2  
 PFD 6.9e-01  
 Delays (us)  
 SBD 0.736060  
 MBD 0.007068  
 Fringe rate (Hz)  
 0.622299  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

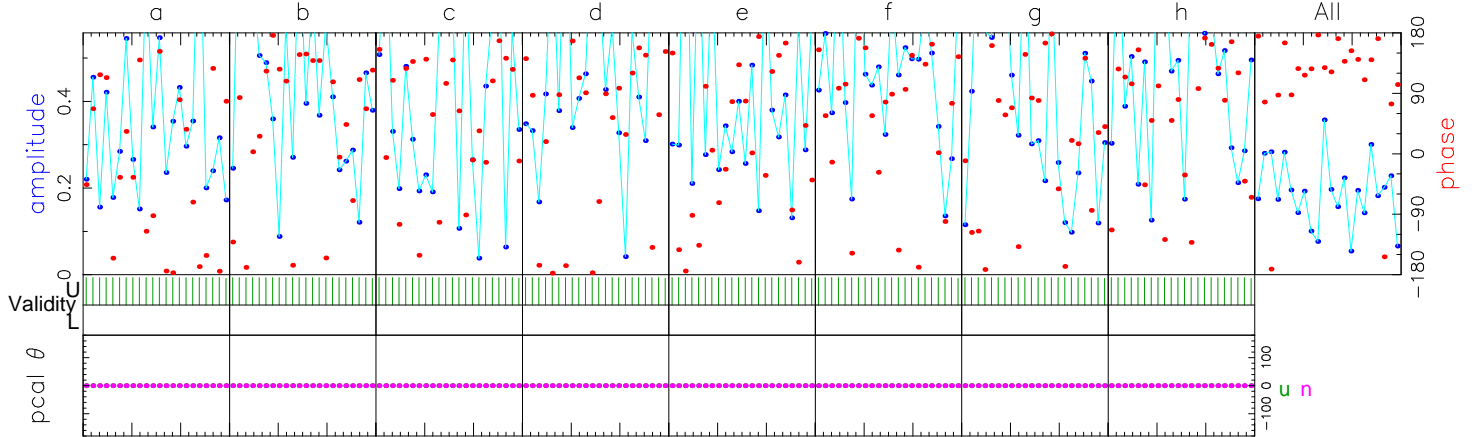


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134814  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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		
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
n	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd)	-7.73873626700E+03	Apriori delay (usec)	-7.73947770966E+03	Resid mbdelay (usec)	7.06765E-03	+/-	1.9E-04
Sband delay (usec)	-7.73874164941E+03	Apriori clock (usec)	2.3905907E+00	Resid sbdelay (usec)	7.36060E-01	+/-	1.5E-03
Phase delay (usec)	-7.73947770530E+03	Apriori clockrate (us/s)	-1.0000003E-07	Resid phdelay (usec)	4.35873E-06	+/-	6.4E-07
Delay rate (us/s)	1.09623791476E+00	Apriori rate (us/s)	1.09623069049E+00	Resid rate (us/s)	7.22428E-06	+/-	6.2E-09
Total phase (deg)	-192.4	Apriori accel (us/s/s)	3.30069945204E-05	Resid phase (deg)	135.2	+/-	20.0

ph/seg (deg)	36.4	Theor.	46.8	Amplitude	0.186 +/- 0.032	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000
amp/seg (%)	53.8		81.7	Search (1024X32)	0.151	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		mb window (us)	-0.008	0.008
ph/frq (deg)	31.5		28.2	Inc. seg. avg.	0.171	Bits/sample: 2x2	SampCntNorm: enabled	dr window (ns/s)	-0.011	0.011
amp/frq (%)	45.9		49.3	Inc. frq. avg.	0.170	Sample rate(MISamp/s): 128		ion window (TEC)	0.00	0.00
u: az 36.2 el 28.1 pa -67.5		n: az 316.4 el 57.1 pa 100.2		u,v (fr/asec)	-11992.139 3893.172	Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite		

Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/un..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/un.W.391.1HRBHI

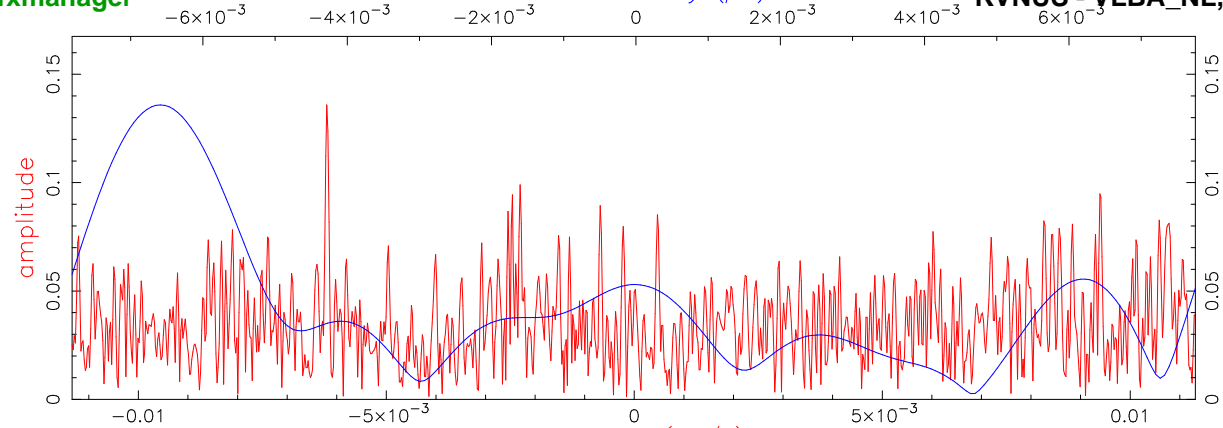
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

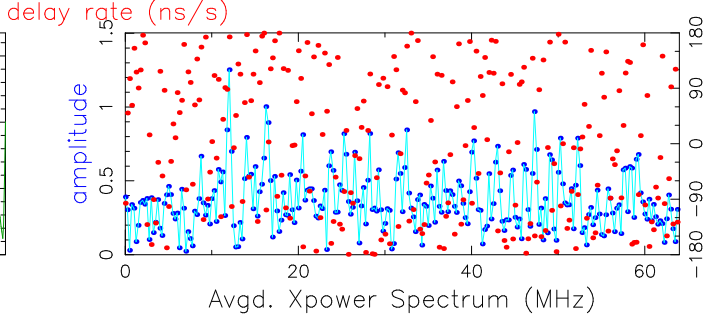
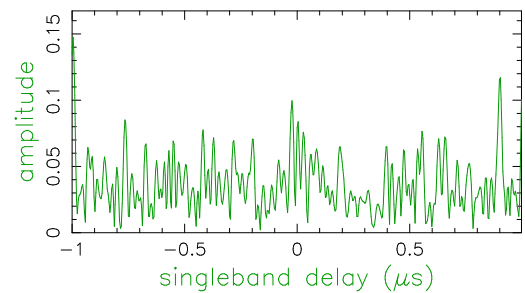
0102+584.1HRBHI, No0113, un

KVNUS - VLBA\_NL, fgroup W, pol RR

multiband delay ( $\mu$ s)

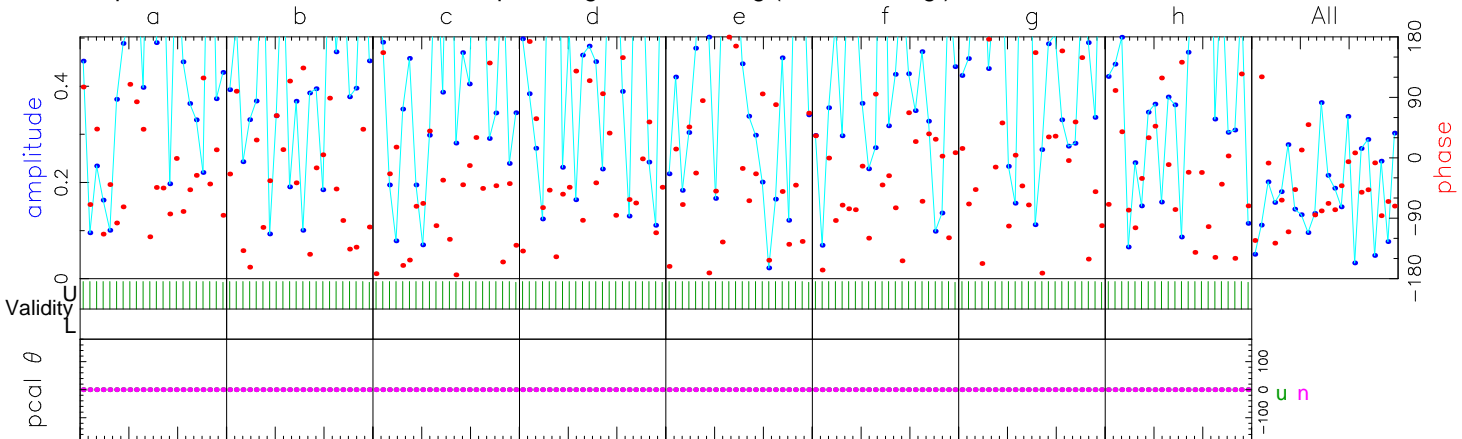


Fringe quality 0  
 SNR 5.4  
 Int time 179.976  
 Amp 0.167  
 Phase -59.1  
 PFD 1.0e+00  
 Delays (us)  
 SBD -0.995992  
 MBD -0.006583  
 Fringe rate (Hz)  
 -0.535675  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134816  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"



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
	-40.8	-36.0	-99.0	-68.2	-90.4	-49.1	-55.8	-51.8	Phase	-59.1
	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.1	Ampl.	0.1
	62.5	417.4	511.6	424.5	400.3	483.8	251.0	185.4	Sbd box	2.0
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-7.74046866802E+03		Apriori delay (usec)		-7.73947770966E+03		Resid mbdelay (usec)		-6.58336E-03	+/- 2.0E-04
Sband delay (usec)	-7.74047370216E+03		Apriori clock (usec)		2.3905907E+00		Resid sbdelay (usec)		-9.95992E-01	+/- 1.6E-03
Phase delay (usec)	-7.73947771156E+03		Apriori clockrate (us/s)		-1.0000003E-07		Resid phdelay (usec)		-1.90564E-06	+/- 6.8E-07
Delay rate (us/s)	1.09622447183E+00		Apriori rate (us/s)		1.09623069049E+00		Resid rate (us/s)		-6.21865E-06	+/- 6.6E-09
Total phase (deg)			Apriori accel (us/s/s)		3.30069945204E-05		Resid phase (deg)		-59.1	+/- 21.2

ph/seg (deg) 58.8 49.7 Search (1024X32) 0.144 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 67.9 86.7 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 24.8 29.9 Inc. seg. avg. 0.150 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 34.1 52.3 Inc. frq. avg. 0.144 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 u: az 36.2 el 28.1 pa -67.5 n: az 316.4 el 57.1 pa 100.2 u,v (fr/asec) -11992.139 3893.172 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/un..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/un.W.408.1HRBHI

Mk4/DiFX fourfit 3.21 rev 2937

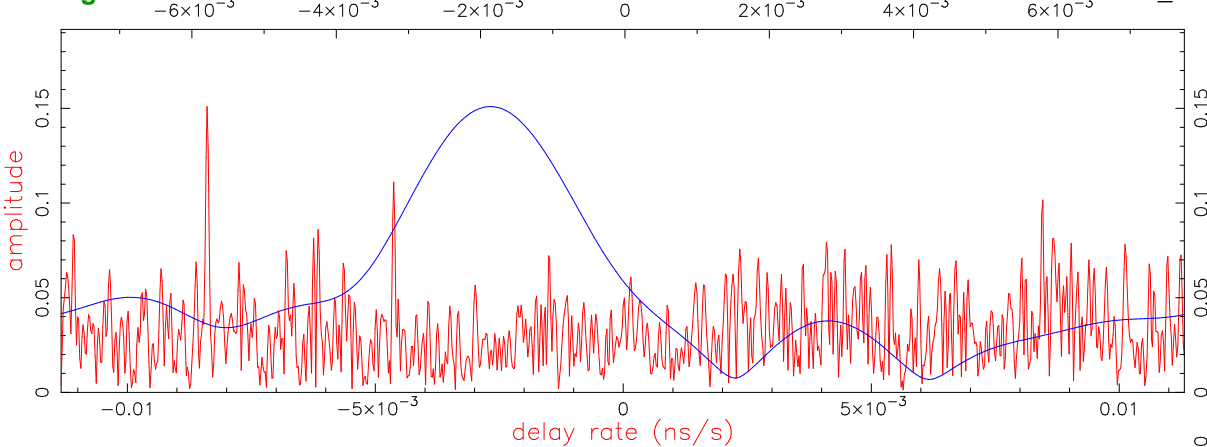
fxmanager

0102+584.1HRBHI, No0113, un

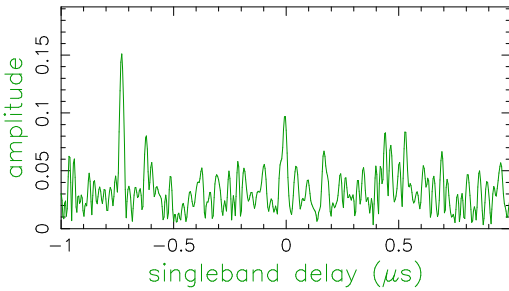
KVNUS - VLBA\_NL, fgroup W, pol LR

multiband delay ( $\mu$ s)

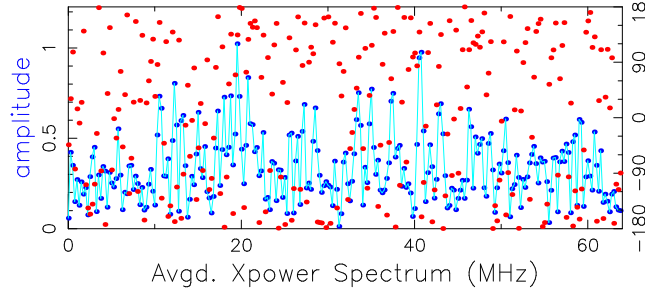
Fringe quality 0



SNR 5.5  
 Int time 179.976  
 Amp 0.192  
 Phase 30.7  
 PFD 9.7e-01  
 Delays (us)  
 SBD -0.730983  
 MBD -0.001847  
 Fringe rate (Hz)  
 -0.724852  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

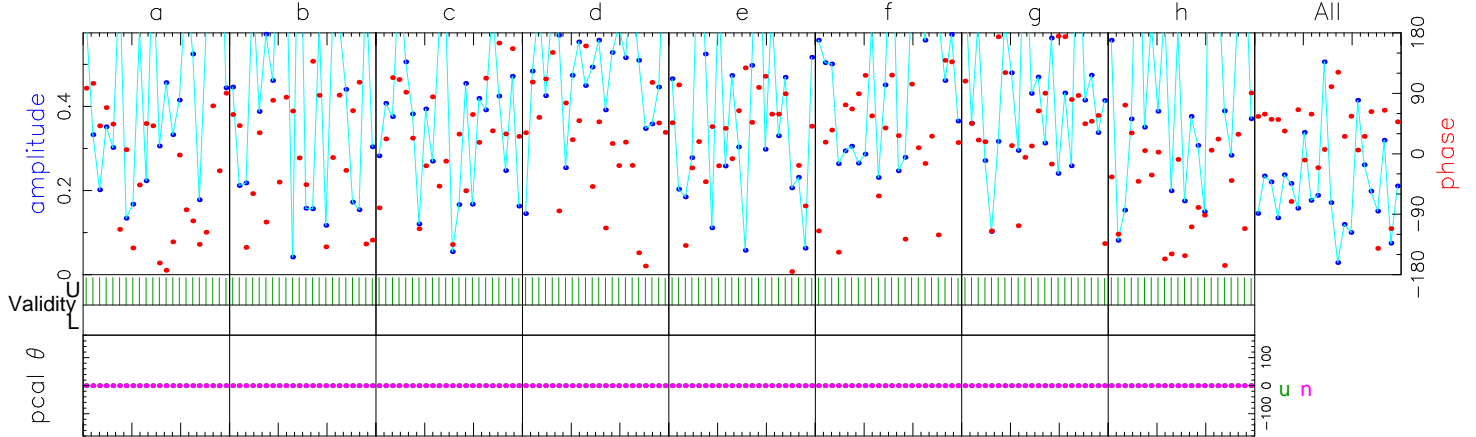


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134817  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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			
u	1000	1000	1000	1000	1000	1000	1000	1000			
n	1000	1000	1000	1000	1000	1000	1000	1000			
u:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0			
u:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0			
u	1000	1000	1000	1000	1000	1000	1000	1000			
n	1000	1000	1000	1000	1000	1000	1000	1000			
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL			
n	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR			
Group delay (usec)(sbd)	-7.74021393127E+03					-7.73947770966E+03			Resid mbdelay (usec)	-1.84662E-03	+/- 2.0E-04
Sband delay (usec)	-7.74020869266E+03					2.3905907E+00			Resid sbdelay (usec)	-7.30983E-01	+/- 1.6E-03
Phase delay (usec)	-7.73947770867E+03					-1.0000003E-07			Resid phdelay (usec)	9.89196E-07	+/- 6.7E-07
Delay rate (us/s)	1.09622227567E+00					1.09623069049E+00			Resid rate (us/s)	-8.41482E-06	+/- 6.4E-09
Total phase (deg)			-296.9			3.30069945204E-05			Resid phase (deg)	30.7	+/- 20.7
RMS	62.5	48.5							PCal mode: MANUAL, MANUAL		
ph/seg (deg)	62.5	48.5							PCal rate: 0.000E+00, 0.000E+00 (us/s)		
amp/seg (%)	80.8	84.6							Bits/sample: 2x2		
ph/frq (deg)	36.0	29.2							SampCntNorm: enabled		
amp/frq (%)	38.7	51.0							Sample rate(MISamp/s): 128		
									Data rate(Mb/s): 2048		
									nlags: 256		
									t_cohere infinite		
u: az 36.2 el 28.1 pa -67.5									ion window (TEC)	0.00	0.00
n: az 316.4 el 57.1 pa 100.2											
u,v (fr/asec)											simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/un..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/un.W.417.1HRBHI

Mk4/DiFX fourfit 3.21 rev 2937

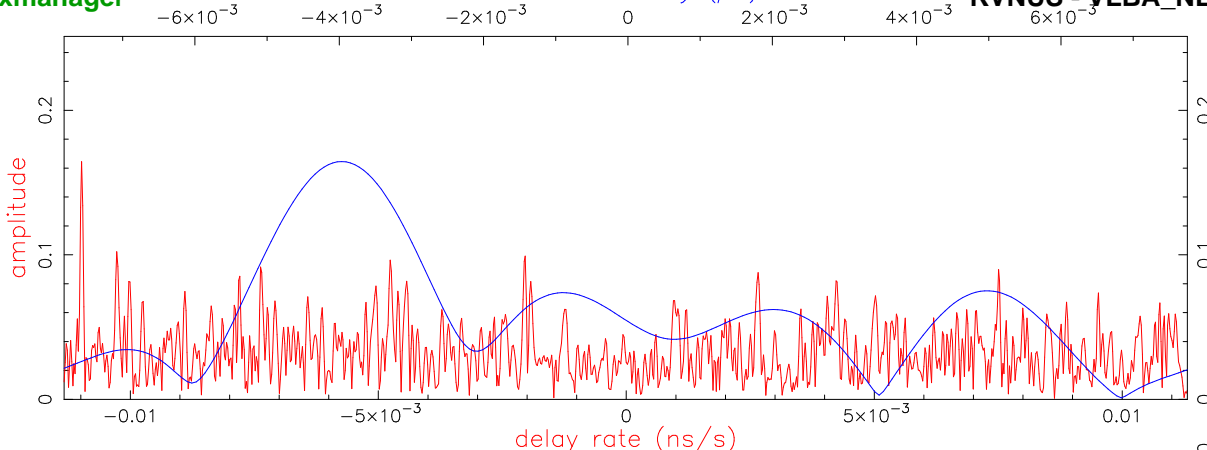
fxmanager

0102+584.1HRBHI, No0113, un

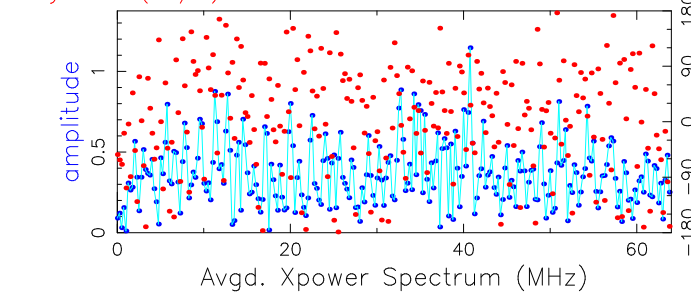
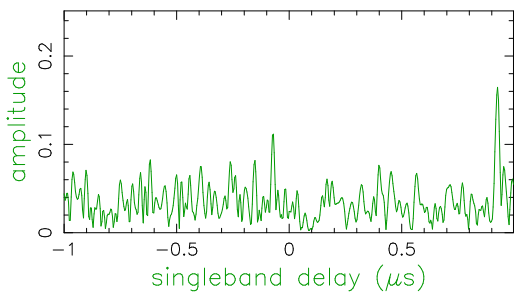
KVNUS - VLBA\_NL, fgroup W, pol RL

multiband delay ( $\mu$ s)

Fringe quality 0

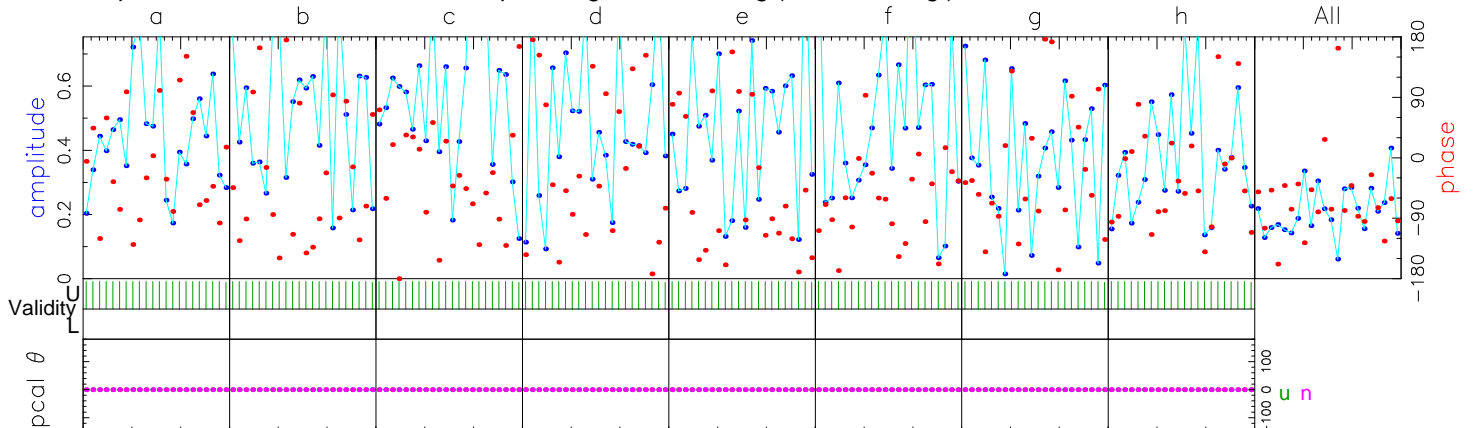


SNR 6.0  
 Int time 179.976  
 Amp 0.251  
 Phase -71.8  
 PFD 1.8e-01  
 Delays (us)  
 SBD 0.925321  
 MBD -0.003979  
 Fringe rate (Hz)  
 -0.946893  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134819  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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
	-41.2	-99.0	-35.5	-113.6	-109.8	-67.0	-90.8	-41.1	Phase	-71.8
	0.2	0.3	0.4	0.2	0.2	0.5	0.2	0.3	Ampl.	0.3
	510.7	492.5	142.3	254.3	98.5	502.6	365.8	319.9	Sbd box	493.9
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
n	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:n	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
n	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
n	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd)	-7.73855981325E+03	Apriori delay (usec)	-7.73947770966E+03	Resid mbdelay (usec)	-3.97860E-03	+/-	1.8E-04
Sband delay (usec)	-7.73855238866E+03	Apriori clock (usec)	2.3905907E+00	Resid sbdelay (usec)	9.25321E-01	+/-	1.4E-03
Phase delay (usec)	-7.73947771197E+03	Apriori clockrate (us/s)	-1.0000003E-07	Resid phdelay (usec)	-2.31651E-06	+/-	6.1E-07
Delay rate (us/s)	1.09621969800E+00	Apriori rate (us/s)	1.09623069049E+00	Resid rate (us/s)	-1.09925E-05	+/-	5.9E-09
Total phase (deg)		Apriori accel (us/s/s)	3.30069945204E-05	Resid phase (deg)	-71.8	+/-	19.0

ph/seg (deg)	RMS 46.7	Theor. 44.5	Amplitude Search (1024X32)	0.157	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000	
amp/seg (%)	54.8	77.6	Interp.	0.000	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	SampCntNorm: enabled	mb window (us)	-0.008	0.008	
ph/frq (deg)	35.4	26.8	Inc. seg. avg.	0.247	Bits/sample: 2x2	Sample rate(MISamp/s): 128	dr window (ns/s)	-0.011	0.011	
amp/frq (%)	40.9	46.8	Inc. frq. avg.	0.258	Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00	0.00

u: az 36.2 el 28.1 pa -67.5      n: az 316.4 el 57.1 pa 100.2      u,v (fr/asec) -11992.139 3893.172      simultaneous interpolator  
 Control file: cf\_1234\_gmva      Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/un..1HRBHI      Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/un.W.429.1HRBHI



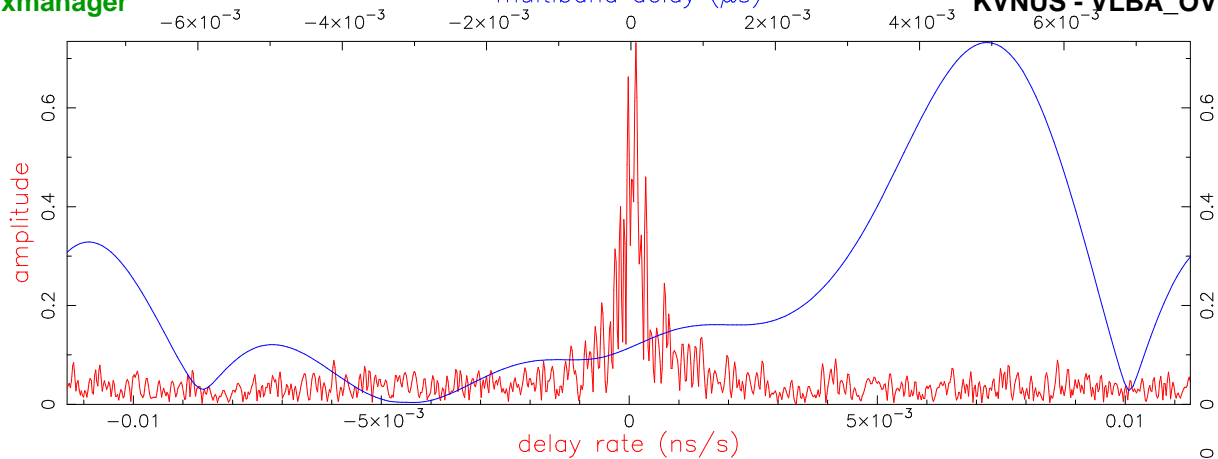
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, uo

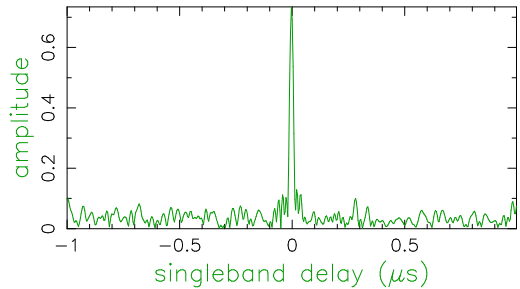
KVNUS - VLBA\_OV, fgroup W, pol LL

multiband delay ( $\mu$ s)

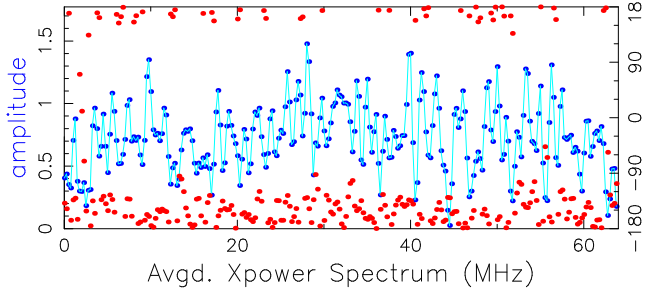


Fringe quality 6

SNR 26.9  
 Int time 179.974  
 Amp 0.735  
 Phase 109.9  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.003139  
 MBD 0.004978  
 Fringe rate (Hz)  
 0.011988  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

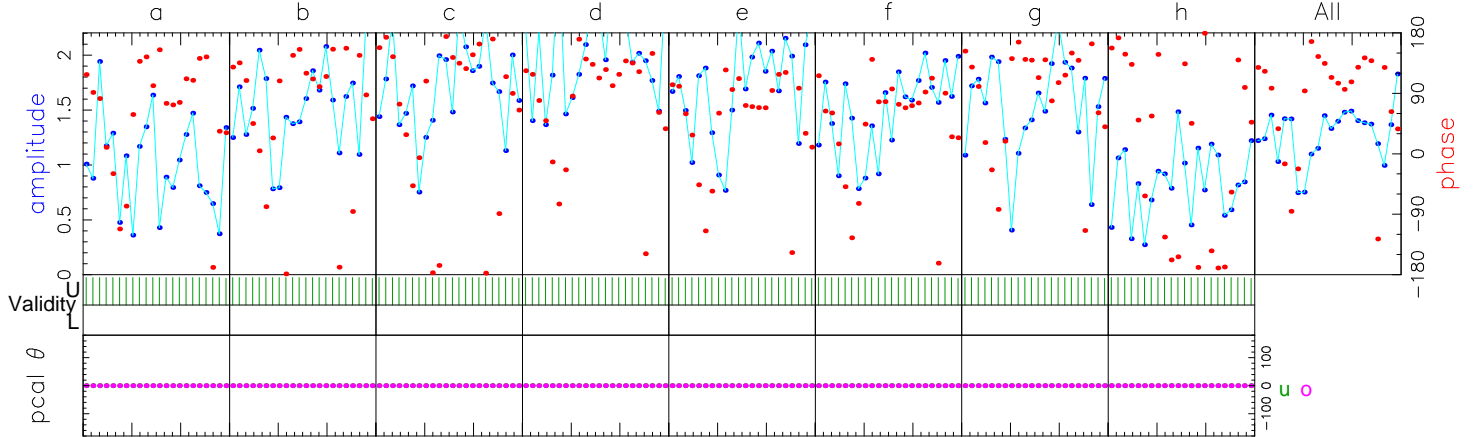


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134815  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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		
u	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
u:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	-9.26486850363E+03									
Sband delay (usec)	-9.26486099567E+03									
Phase delay (usec)	-9.26485785313E+03									
Delay rate (us/s)	8.75115210057E-01									
Total phase (deg)			-168.6							
Apriori delay (usec)					-9.26485785667E+03				4.97805E-03	+/- 4.0E-05
Apriori clock (usec)					0.720				-3.13900E-03	+/- 3.2E-04
Apriori clockrate (us/s)					0.000				3.54508E-06	+/- 1.4E-07
Apriori rate (us/s)					8.75115070888E-01				1.39169E-07	+/- 1.3E-09
Apriori accel (us/s/s)					4.68773911410E-05				109.9	+/- 4.3
Resid mbdelay (usec)										
Resid sbdelay (usec)										
Resid phdelay (usec)										
Resid rate (us/s)										
Resid phase (deg)										
Pcal mode: MANUAL, MANUAL										
Pcal rate: 0.000E+00, 0.000E+00 (us/s)										
Bits/sample: 2x2										
Sample rate(MISamp/s): 128										
Data rate(Mb/s): 2048										
PC period (AP's) 5, 5										
sb window (us)									-1.000	1.000
mb window (us)									-0.008	0.008
dr window (ns/s)									-0.011	0.011
ion window (TEC)									0.00	0.00

ph/seg (deg) 66.4 10.0 Search (1024X32) 0.720 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 81.6 17.4 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 34.0 6.0 Inc. seg. avg. 1.264 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 32.1 10.5 Inc. frq. avg. 0.818 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 u: az 36.2 el 28.1 pa -67.5 o: az 335.8 el 65.3 pa 141.4 u,v (fr/asec) -9556.611 5943.462 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uo..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uo.W.405.1HRBHI

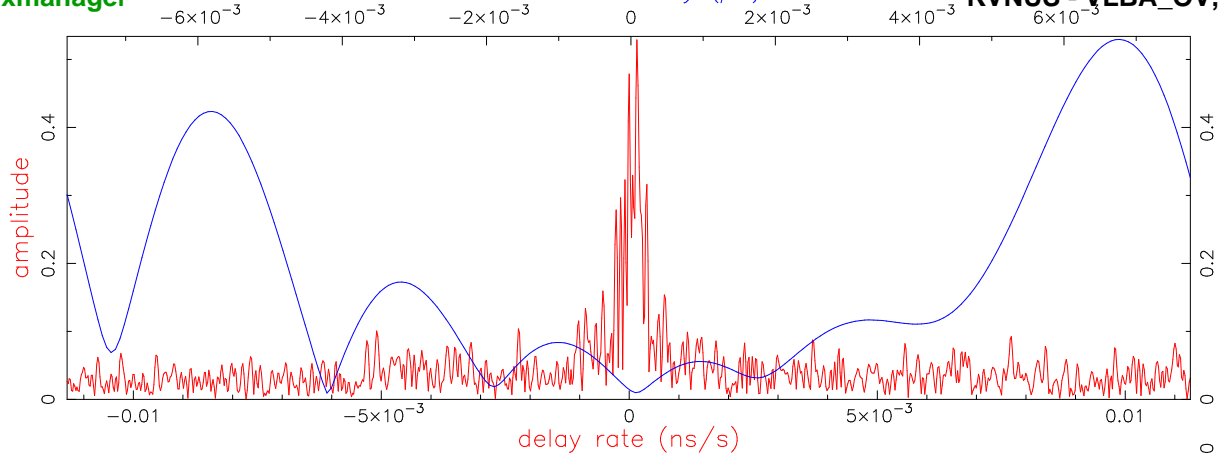
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, uo

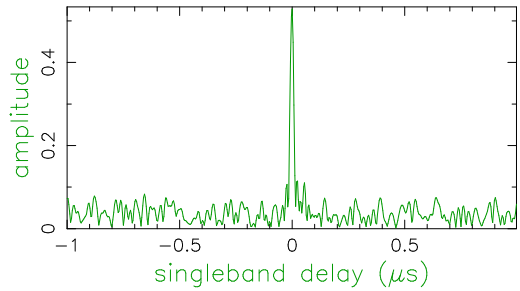
KVNUS - VLBA\_OV, fgroup W, pol RR

multiband delay ( $\mu$ s)

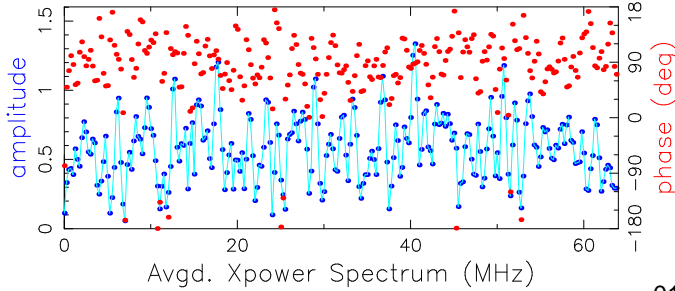


Fringe quality 8

SNR 19.6  
 Int time 179.974  
 Amp 0.534  
 Phase 1.8  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.001245  
 MBD 0.006703  
 Fringe rate (Hz)  
 0.012571  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

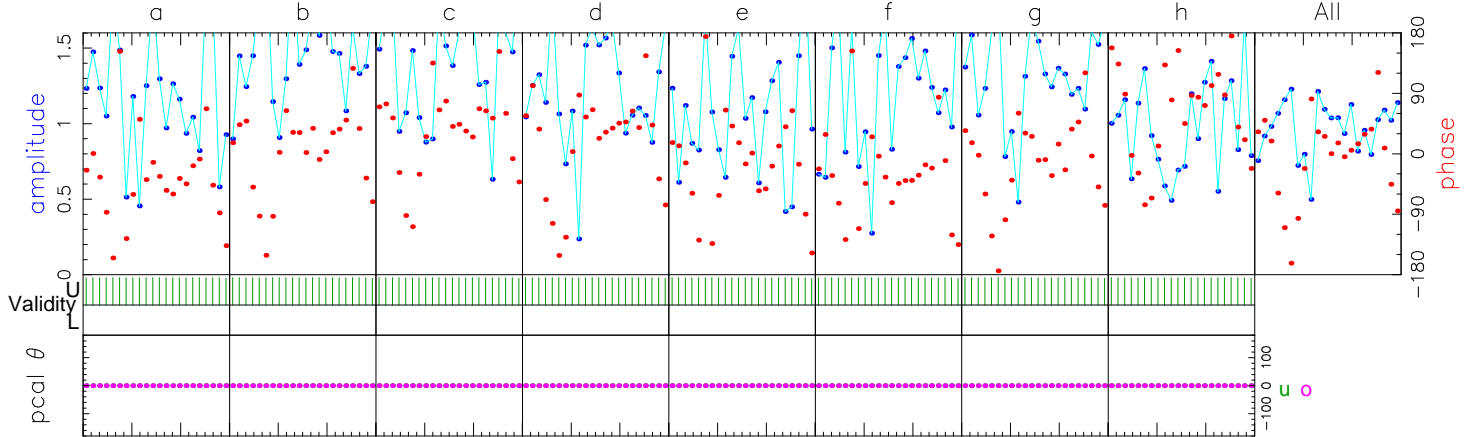


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134817  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

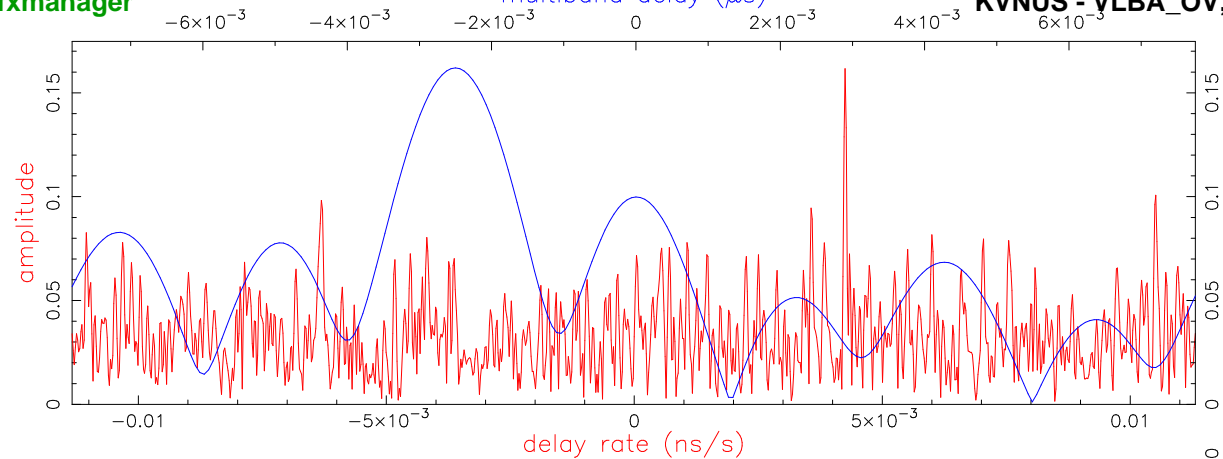
Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



	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		
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
o	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-9.26486677901E+03				-9.26485785667E+03				6.70266E-03	+/- 5.5E-05
Sband delay (usec)	-9.26485910167E+03				-1.8883955E+01				-1.24500E-03	+/- 4.4E-04
Phase delay (usec)	-9.26485785662E+03				5.0000000E-07				5.69498E-08	+/- 1.9E-07
Delay rate (us/s)	8.75115216829E-01				8.75115070888E-01				1.45942E-07	+/- 1.8E-09
Total phase (deg)			-276.8		4.68773911410E-05				1.8	+/- 5.9
									Resid mbdelay (usec)	
									Resid sbdelay (usec)	
									Resid phdelay (usec)	
									Resid rate (us/s)	
									Resid phase (deg)	
ph/seg (deg)	64.4	13.7							PCal mode: MANUAL, MANUAL	
amp/seg (%)	88.8	24.0							PCal rate: 0.000E+00, 0.000E+00 (us/s)	
ph/frq (deg)	45.6	8.3							PC period (AP's) 5, 5	
amp/frq (%)	34.3	14.4							sb window (us)	-1.000 1.000
									Bits/sample: 2x2	-0.008 0.008
									SampCntNorm: enabled	0.001 0.011
									Sample rate(MISamp/s): 128	0.00 0.00
									Data rate(Mb/s): 2048	
									nlags: 256	
									t_cohere infinite	
									ion window (TEC)	
u: az 36.2 el 28.1 pa -67.5										
o: az 335.8 el 65.3 pa 141.4										
u,v (fr/asec) -9556.611 5943.462										simultaneous interpolator

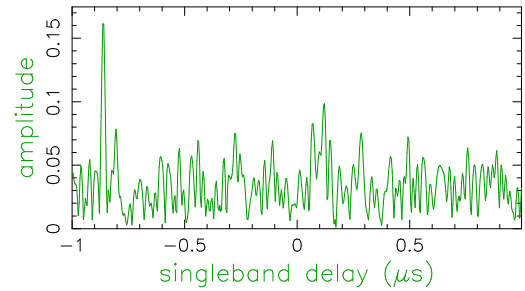
Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uo...1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uo.W.414.1HRBHI

multiband delay ( $\mu$ s)

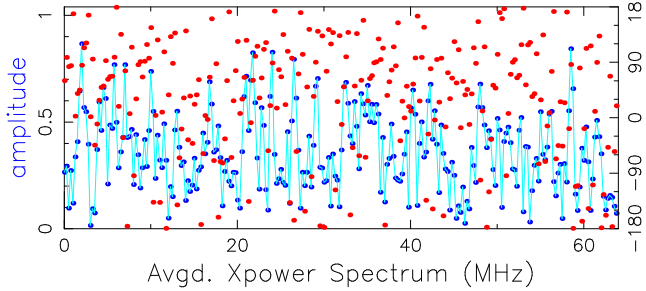


Fringe quality 0

SNR 6.0  
Int time 179.974  
Amp 0.175  
Phase -98.1  
PFD 1.7e-01  
Delays (us)  
SBD -0.861467  
MBD -0.002442  
Fringe rate (Hz)  
0.365901  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512

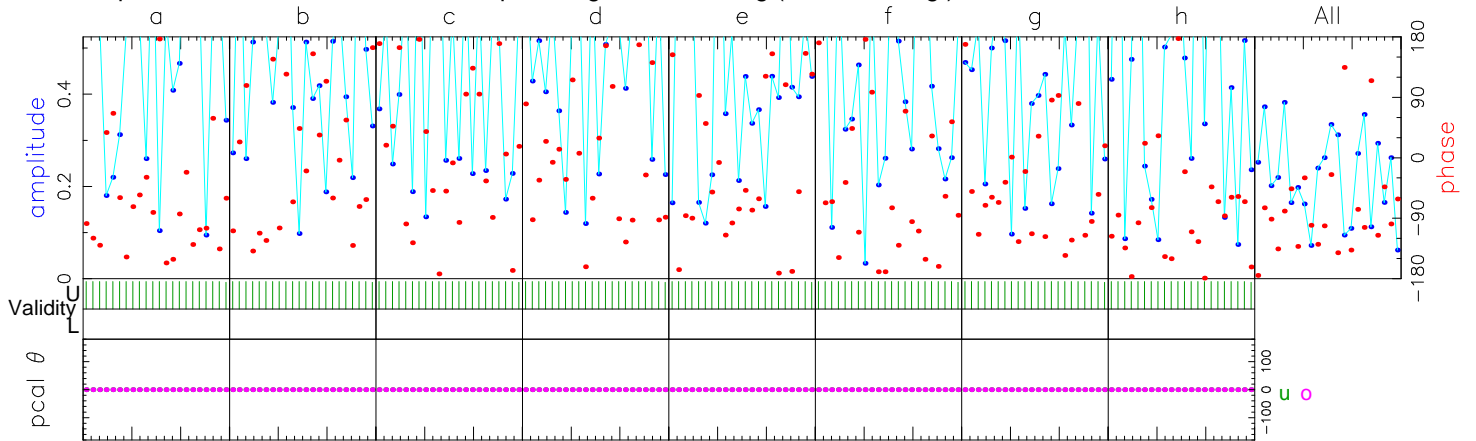


delay rate (ns/s)



Exp. c202a  
Exper # 16383  
Yr:day 2020:283  
Start 090000.00  
Stop 090300.22  
FRT 090130.00  
Corr/FF/build  
2021:006:172908  
2021:010:134819  
2020:247:085004  
RA & Dec (J2000)  
01h02m45.762375s  
+58°24'11.136621"

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
	-94.8	-82.3	-160.9	-41.7	-121.8	-119.8	-90.5	-101.0	Phase	-98.1
	0.3	0.1	0.0	0.1	0.1	0.2	0.2	0.3	Ampl.	0.2
	37.3	114.9	285.7	403.5	55.1	424.2	56.7	36.6	Sbd box	36.5
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
o	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
o	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
o	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

Group delay (usec)(sbd)	-9.26571967355E+03	Apriori delay (usec)	-9.26485785667E+03	Resid mbdelay (usec)	-2.44187E-03	+/-	1.8E-04
Sband delay (usec)	-9.26571932317E+03	Apriori clock (usec)	-1.8883955E+01	Resid sbdelay (usec)	-8.61467E-01	+/-	1.4E-03
Phase delay (usec)	-9.26485785984E+03	Apriori clockrate (us/s)	5.0000000E-07	Resid phdelay (usec)	-3.16329E-06	+/-	6.1E-07
Delay rate (us/s)	8.75119318638E-01	Apriori rate (us/s)	8.75115070888E-01	Resid rate (us/s)	4.24775E-06	+/-	5.9E-09
Total phase (deg)	-16.7	Apriori accel (us/s/s)	4.68773911410E-05	Resid phase (deg)	-98.1	+/-	18.9

ph/seg (deg)	56.2	Theor.	44.4	Amplitude	0.175 +/- 0.029	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000
amp/seg (%)	67.6		77.6	Search (1024X32)	0.160	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		mb window (us)	-0.008	0.008
ph/frq (deg)	37.6		26.8	Interp.	0.000	Bits/sample: 2x2	SampCntNorm: enabled	dr window (ns/s)	-0.011	0.011
amp/frq (%)	57.0		46.8	Inc. seg. avg.	0.182	Sample rate(MISamp/s): 128		ion window (TEC)	0.00	0.00
				Inc. frq. avg.	0.166	Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite		

u: az 36.2 el 28.1 pa -67.5      o: az 335.8 el 65.3 pa 141.4      u,v (fr/asec) -9556.611 5943.462      simultaneous interpolator  
Control file: cf\_1234\_gmva    Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uo...1HRBHI    Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uo.W.427.1HRBHI

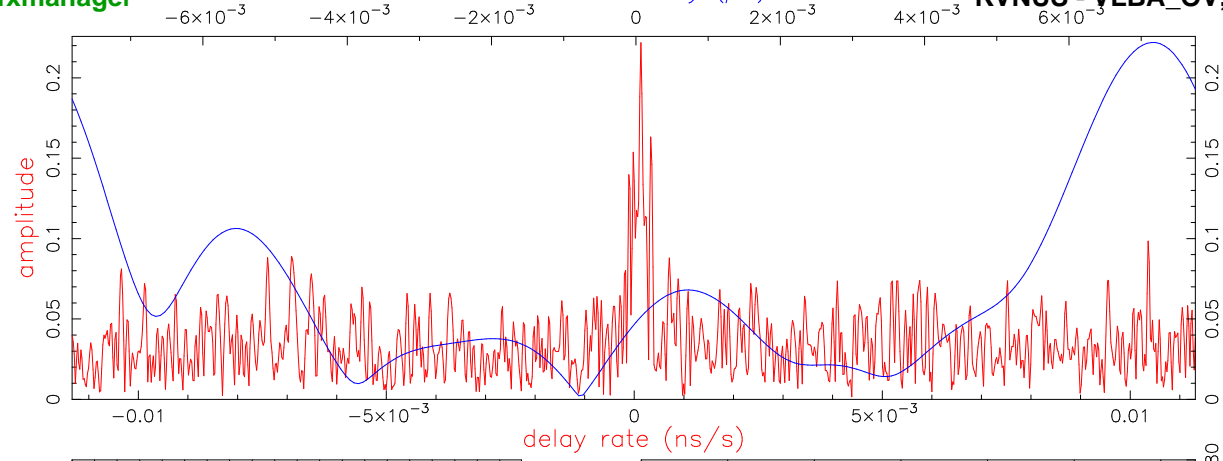
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, uo

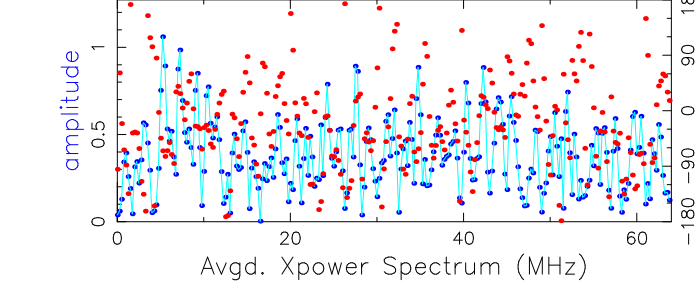
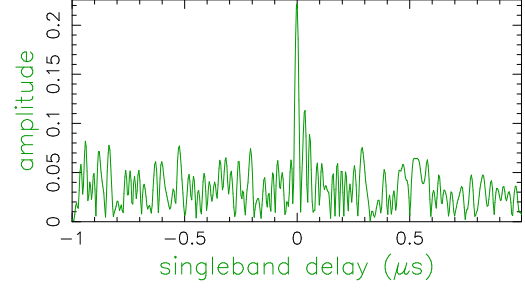
KVNUS - VLBA\_OV, fgroup W, pol RL

multiband delay ( $\mu$ s)



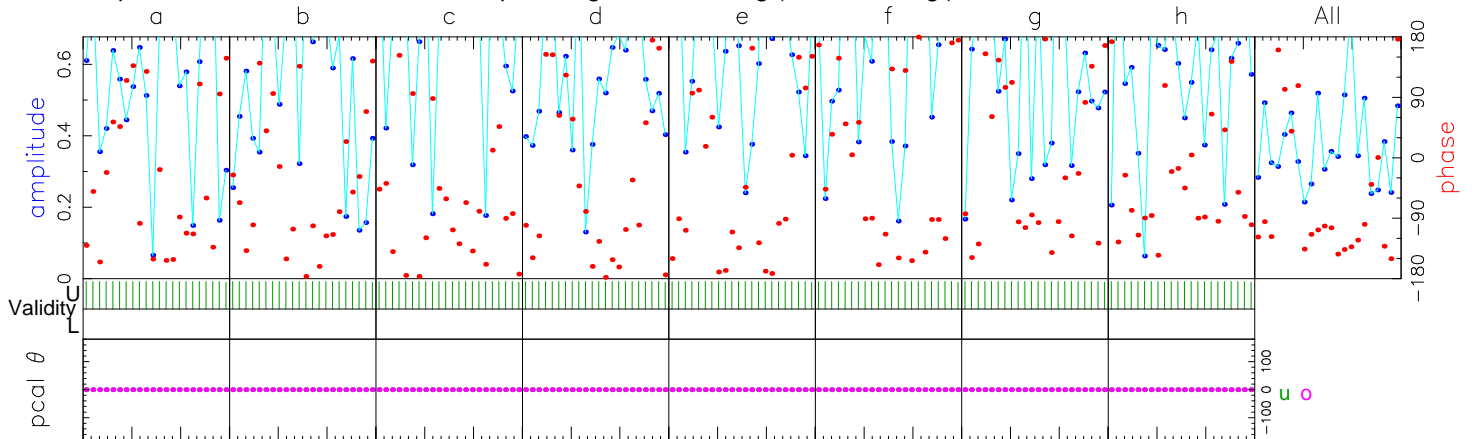
Fringe quality 9

SNR 8.3  
 Int time 179.974  
 Amp 0.226  
 Phase -127.0  
 PFD 2.1e-08  
 Delays (us)  
 SBD -0.001722  
 MBD 0.007113  
 Fringe rate (Hz) 0.011832  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134821  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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		
u	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
u:o	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u	1000	1000	1000	1000	1000	1000	1000	1000		
o	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
o	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	-9.26486636884E+03	-9.26485957917E+03	-9.26485786077E+03	-9.26485786077E+03	-9.26485786077E+03	-9.26485786077E+03	-9.26485786077E+03	-9.26485786077E+03		
Sband delay (usec)	-9.26485957917E+03	-9.26485957917E+03	-9.26485957917E+03	-9.26485957917E+03	-9.26485957917E+03	-9.26485957917E+03	-9.26485957917E+03	-9.26485957917E+03		
Phase delay (usec)	-9.26485786077E+03	-9.26485786077E+03	-9.26485786077E+03	-9.26485786077E+03	-9.26485786077E+03	-9.26485786077E+03	-9.26485786077E+03	-9.26485786077E+03		
Delay rate (us/s)	8.75115208242E-01	8.75115208242E-01	8.75115208242E-01	8.75115208242E-01	8.75115208242E-01	8.75115208242E-01	8.75115208242E-01	8.75115208242E-01		
Total phase (deg)			-45.6							
Apriori delay (usec)										
Apriori clock (usec)										
Apriori clockrate (us/s)										
Apriori rate (us/s)										
Apriori accel (us/s/s)										
Resid mbdelay (usec)										
Resid sbdelay (usec)										
Resid phdelay (usec)										
Resid rate (us/s)										
Resid phase (deg)										
Pcal mode: MANUAL, MANUAL										
Pcal rate: 0.000E+00, 0.000E+00 (us/s)										
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)										

ph/seg (deg) 66.8 32.4 Search (1024X32) 0.218 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 88.1 56.6 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 29.1 19.6 Inc. seg. avg. 0.327 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 27.2 34.2 Inc. frq. avg. 0.234 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 u: az 36.2 el 28.1 pa -67.5 o: az 335.8 el 65.3 pa 141.4 u,v (fr/asec) -9556.611 5943.462 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uo...1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uo.W.443.1HRBHI

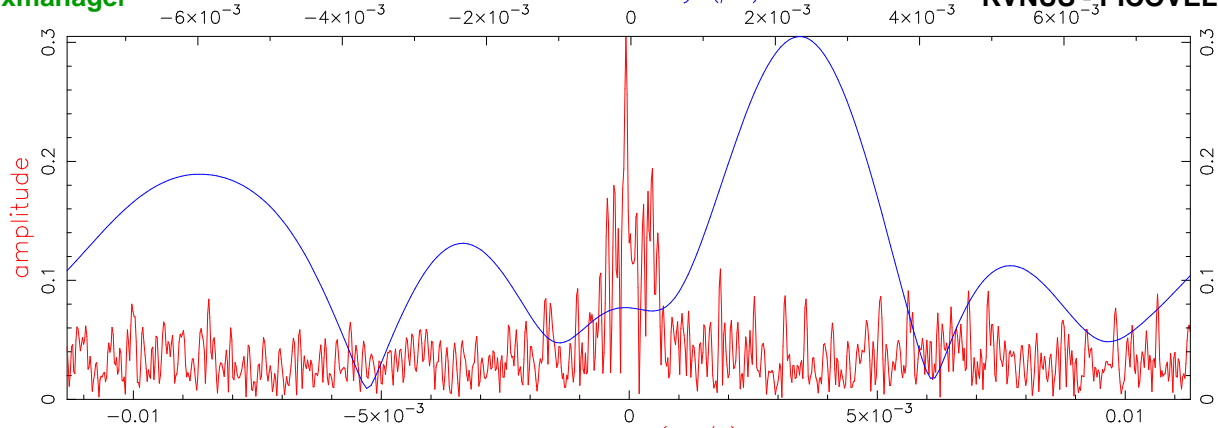
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, uP

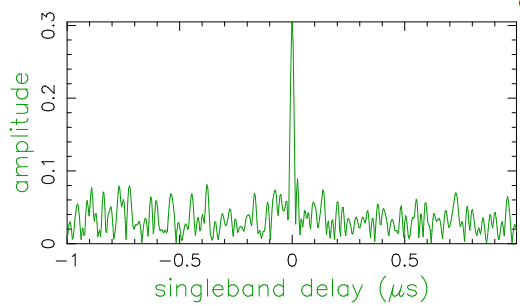
KVNUS - PICOVEL, fgroup W, pol LL

multiband delay ( $\mu$ s)

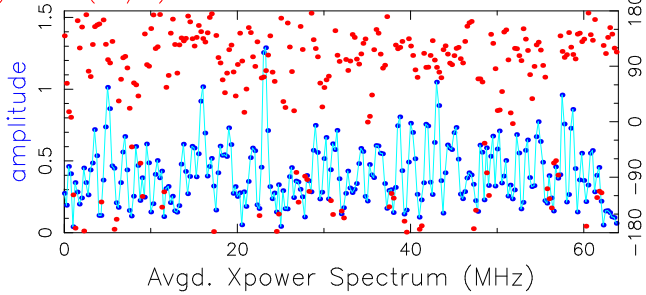


Fringe quality 9

SNR 11.2  
 Int time 179.793  
 Amp 0.305  
 Phase 87.4  
 PFD 1.2e-20  
 Delays (us)  
 SBD -0.000215  
 MBD 0.002337  
 Fringe rate (Hz)  
 -0.005940  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

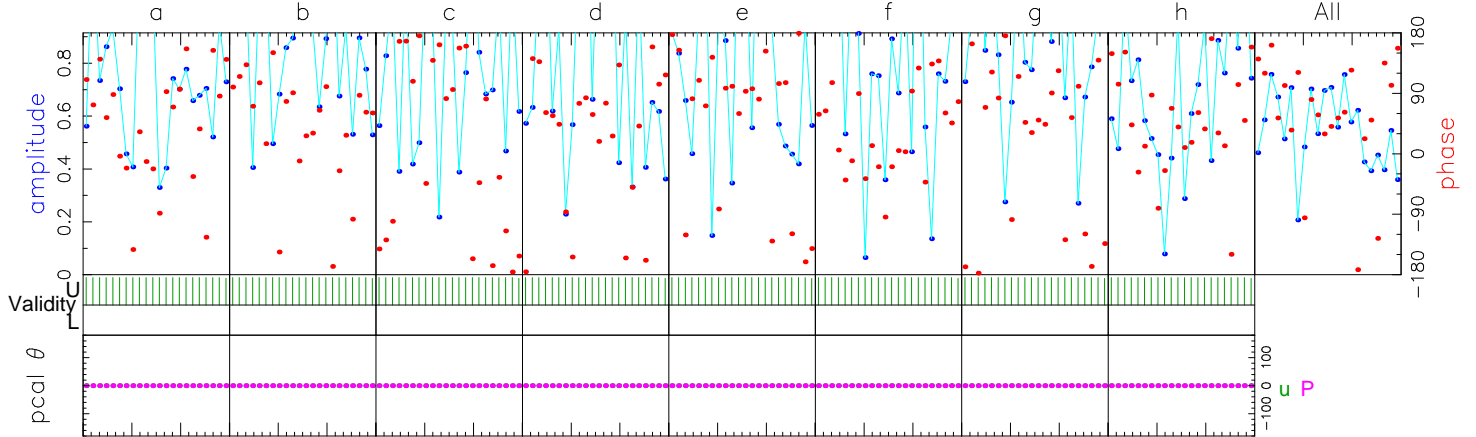


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134815  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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
	63.7	73.8	-170.8	80.4	124.4	43.8	122.8	61.2	Phase	87.4
	0.3	0.5	0.3	0.5	0.4	0.5	0.4	0.3	Ampl.	0.4
	257.9	257.2	257.0	256.2	256.1	256.6	257.3	256.6	Sbd box	256.9
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
P	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
P	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
P	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd)	5.36080404932E+03	Apriori delay (usec)	5.36080171256E+03	Resid mbdelay (usec)	2.33676E-03	+/-	9.7E-05
Sband delay (usec)	5.36080149706E+03	Apriori clock (usec)	2.6995916E+00	Resid sbdelay (usec)	-2.15500E-04	+/-	7.7E-04
Phase delay (usec)	5.36080171538E+03	Apriori clockrate (us/s)	7.9999999E-07	Resid phdelay (usec)	2.81751E-06	+/-	3.3E-07
Delay rate (us/s)	1.12183490917E+00	Apriori rate (us/s)	1.12183497812E+00	Resid rate (us/s)	-6.89526E-08	+/-	3.2E-09
Total phase (deg)	274.6	Apriori accel (us/s/s)	-3.05736458366E-05	Resid phase (deg)	87.4	+/-	10.2

ph/seg (deg)	67.5	RMS	24.0	Theor.	Amplitude	0.305 +/- 0.027	Pcal mode: MANUAL, MANUAL	PC period (AP's)	5, 5		
amp/seg (%)	93.2	67.5	24.0	Search (1024X32)	0.303		Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000		
ph/frq (deg)	52.2	93.2	41.9	Interp.	0.000		Bits/sample: 2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008	
amp/frq (%)	37.5	52.2	14.5	Inc. seg. avg.	0.507		Sample rate(MISamp/s): 128	dr window (ns/s)	-0.011 0.011		
		37.5	25.3	Inc. frq. avg.	0.385		Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00 0.00

u: az 36.2 el 28.1 pa -67.5 P: az 337.3 el 13.0 pa 36.3 u,v (fr/asec) -12325.472 -3966.123 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uP..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uP.W.406.1HRBHI



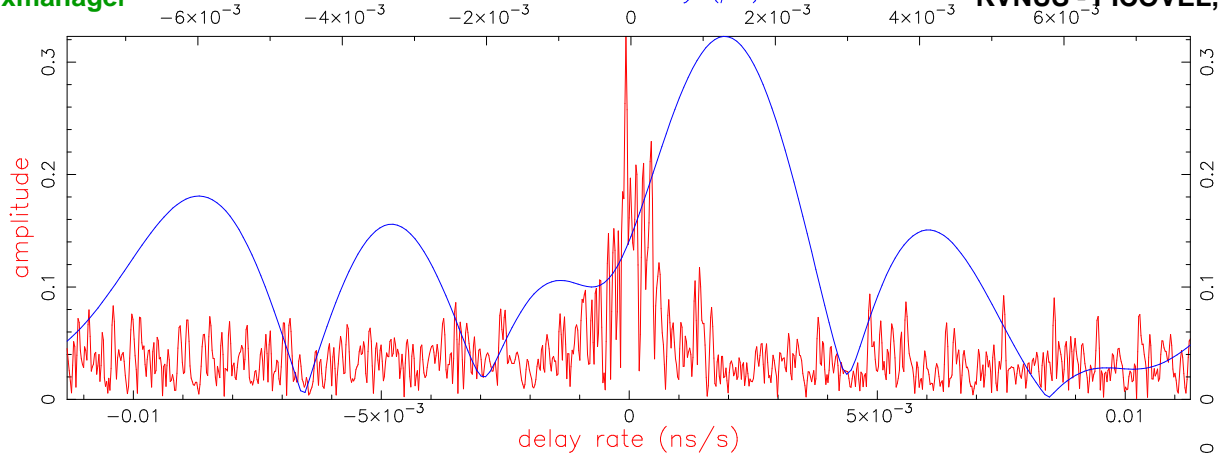
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, uP

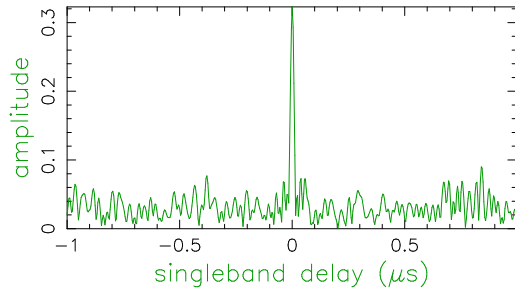
KVNUS - PICOVEL, fgroup W, pol RR

multiband delay ( $\mu$ s)

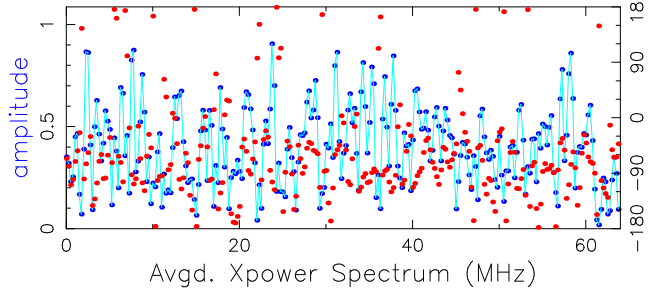


Fringe quality 9

SNR 11.8  
 Int time 179.793  
 Amp 0.323  
 Phase -93.4  
 PFD 6.0e-24  
 Delays (us)  
 SBD 0.000100  
 MBD 0.001303  
 Fringe rate (Hz)  
 -0.006078  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

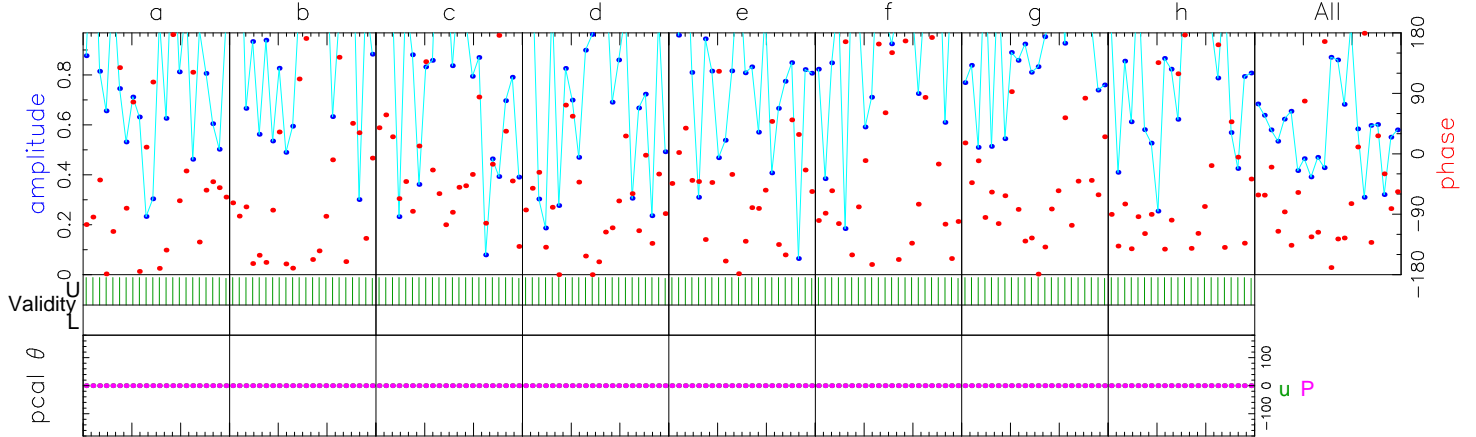


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134817  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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
	-108.2	-138.1	-31.8	-83.1	-57.4	-134.6	-70.5	-112.8	Phase	-93.4
	0.4	0.4	0.4	0.3	0.3	0.4	0.5	0.5	Ampl.	0.4
	258.6	257.1	256.9	257.0	256.4	256.5	256.8	256.7	Sbd box	257.0
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
P	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
P	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
P	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

Group delay (usec)(sbd)	5.36080301507E+03	Apriori delay (usec)	5.36080171256E+03	Resid mbdelay (usec)	1.30251E-03	+/-	9.2E-05
Sband delay (usec)	5.36080181231E+03	Apriori clock (usec)	2.6995916E+00	Resid sbdelay (usec)	9.97500E-05	+/-	7.3E-04
Phase delay (usec)	5.36080170955E+03	Apriori clockrate (us/s)	7.9999999E-07	Resid phdelay (usec)	-3.01311E-06	+/-	3.1E-07
Delay rate (us/s)	1.12183490757E+00	Apriori rate (us/s)	1.12183497812E+00	Resid rate (us/s)	-7.05582E-08	+/-	3.0E-09
Total phase (deg)	93.7	Apriori accel (us/s/s)	-3.05736458366E-05	Resid phase (deg)	-93.4	+/-	9.7

ph/seg (deg)	67.5	Theor.	22.7	Amplitude	0.323 +/- 0.027	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5	sb window (us)	-1.000	1.000	
amp/seg (%)	96.4	Search (1024X32)	0.316	Interp.	0.000	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	SampCntNorm: enabled	mb window (us)	-0.008	0.008	
ph/frq (deg)	40.8	Inc. seg. avg.	0.542	Inc. frq. avg.	0.382	Bits/sample: 2x2	Sample rate(MISamp/s): 128	dr window (ns/s)	-0.011	0.011	
amp/frq (%)	27.8	Inc. frq. avg.	0.382			Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00	0.00

u: az 36.2 el 28.1 pa -67.5 P: az 337.3 el 13.0 pa 36.3 u,v (fr/asec) -12325.472 -3966.123 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uP..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uP.W.415.1HRBHI

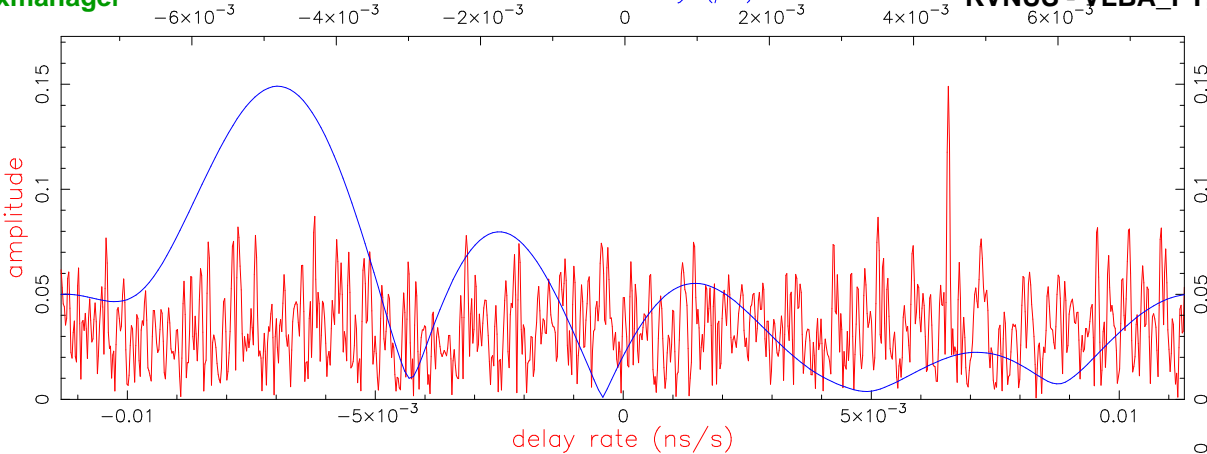
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, up

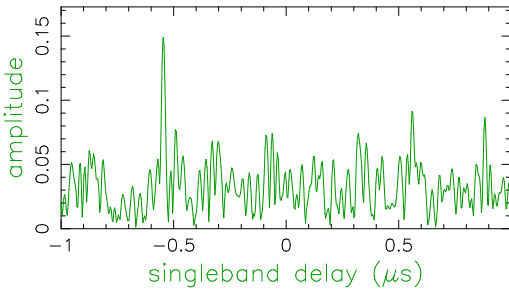
KVNUS - VLBA\_PT, fgroup W, pol RR

multiband delay ( $\mu$ s)

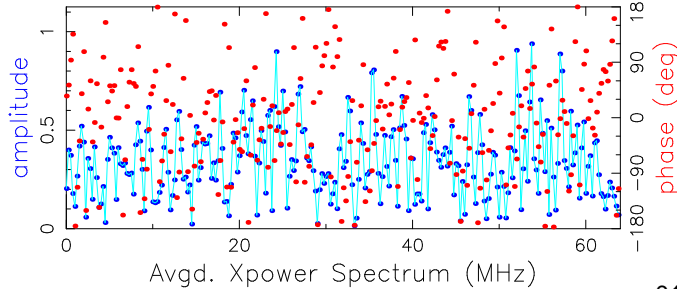


Fringe quality 0

SNR 5.5  
 Int time 179.975  
 Amp 0.173  
 Phase -118.5  
 PFD 9.9e-01  
 Delays (us)  
 SBD -0.545867  
 MBD -0.004785  
 Fringe rate (Hz)  
 0.565968  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

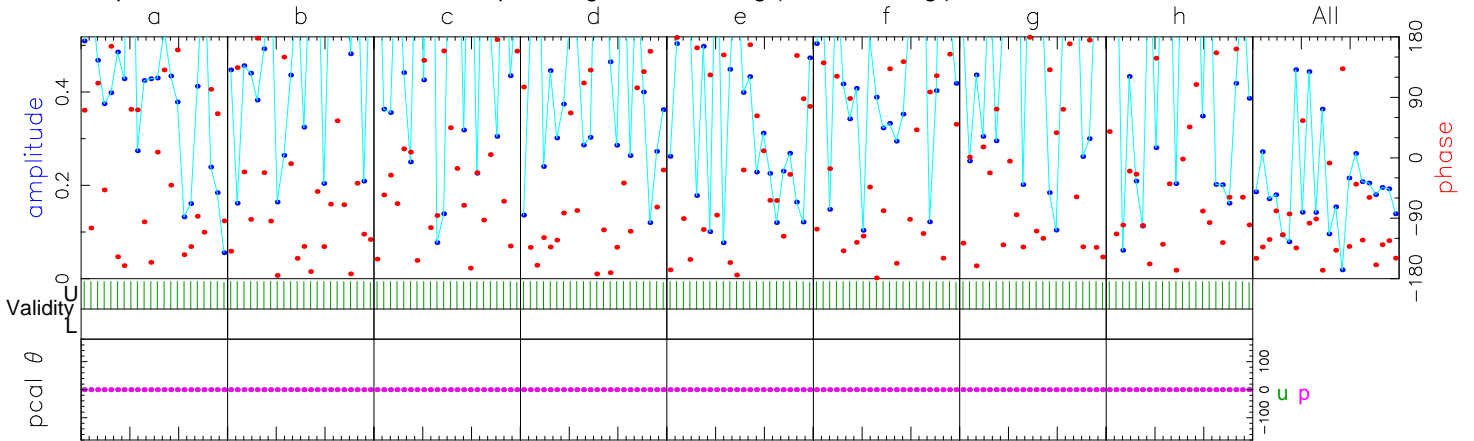


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134818  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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
	-171.9	-95.2	-92.2	-142.1	-134.3	-168.4	-115.2	-85.1	Phase	-118.5
	0.1	0.3	0.3	0.2	0.2	0.2	0.2	0.2	Ampl.	0.2
	173.0	117.5	119.7	289.4	234.3	349.4	118.7	167.6	Sbd box	117.3
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
p	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
p	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
p	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-8.13139140435E+03		Apriori delay (usec)		-8.13083974459E+03		Resid mbdelay (usec)		-4.78475E-03	+/- 2.0E-04
Sband delay (usec)	-8.13138561134E+03		Apriori clock (usec)		2.4750004E+00		Resid sbdelay (usec)		-5.45867E-01	+/- 1.6E-03
Phase delay (usec)	-8.13083974842E+03		Apriori clockrate (us/s)		0.0000000E+00		Resid phdelay (usec)		-3.82208E-06	+/- 6.7E-07
Delay rate (us/s)	9.91142810193E-01		Apriori rate (us/s)		9.91136239863E-01		Resid rate (us/s)		6.57033E-06	+/- 6.5E-09
Total phase (deg)			Apriori accel (us/s/s)		4.49420005701E-05		Resid phase (deg)		-118.5	+/- 20.8

	RMS	Theor.	Amplitude	0.173 +/- 0.031	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
ph/seg (deg)	58.5	48.9	Search (1024X32)	0.146	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
amp/seg (%)	77.5	85.3	Interp.	0.000	Bits/sample: 2x2	SampCntNorm: enabled
ph/frq (deg)	37.6	29.5	Inc. seg. avg.	0.169	Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
amp/frq (%)	37.8	51.4	Inc. frq. avg.	0.173	Data rate(Mb/s): 2048	nlags: 256 t_cohere infinite
u: az 36.2 el 28.1 pa -67.5	p: az 330.3 el 59.0 pa 127.8		u, v (fr/asec) -10830.560 5892.394		ion window (TEC) 0.00 0.00	

Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/up..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/up.W.418.1HRBHI



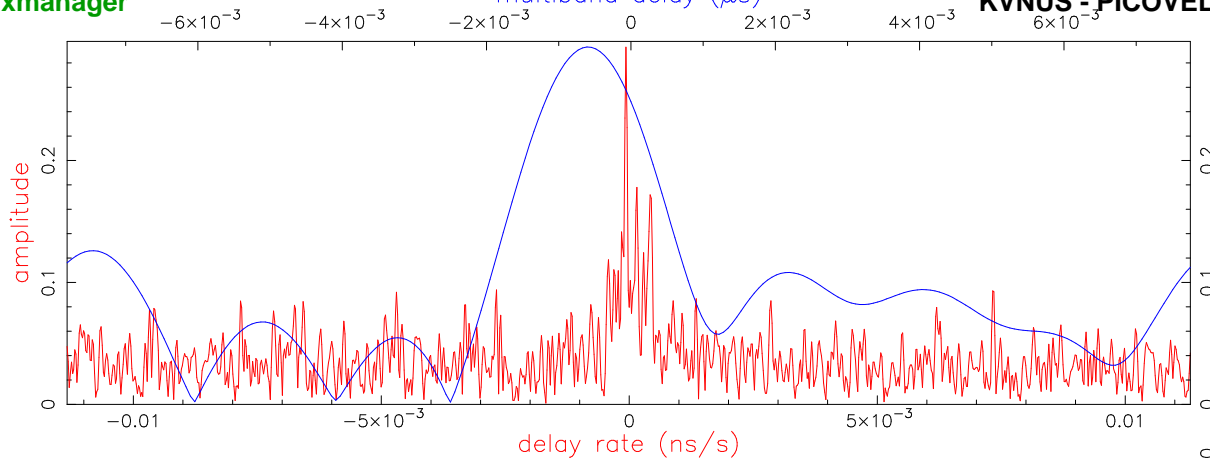
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, uP

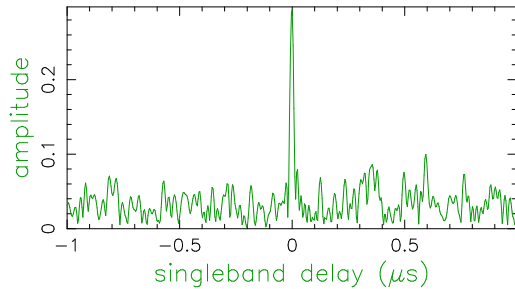
KVNUS - PICOVEL, fgroup W, pol LR

multiband delay ( $\mu$ s)

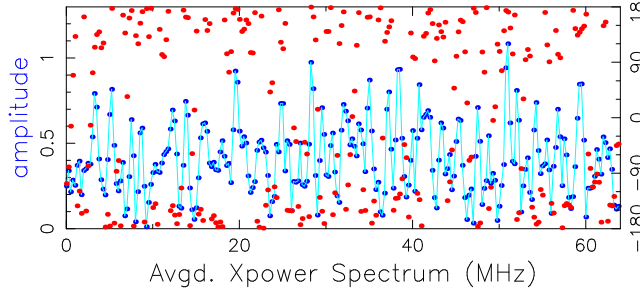


Fringe quality 9

SNR 10.9  
 Int time 179.793  
 Amp 0.298  
 Phase 164.1  
 PFD 2.2e-19  
 Delays (us)  
 SBD -0.001647  
 MBD -0.000632  
 Fringe rate (Hz)  
 -0.005918  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

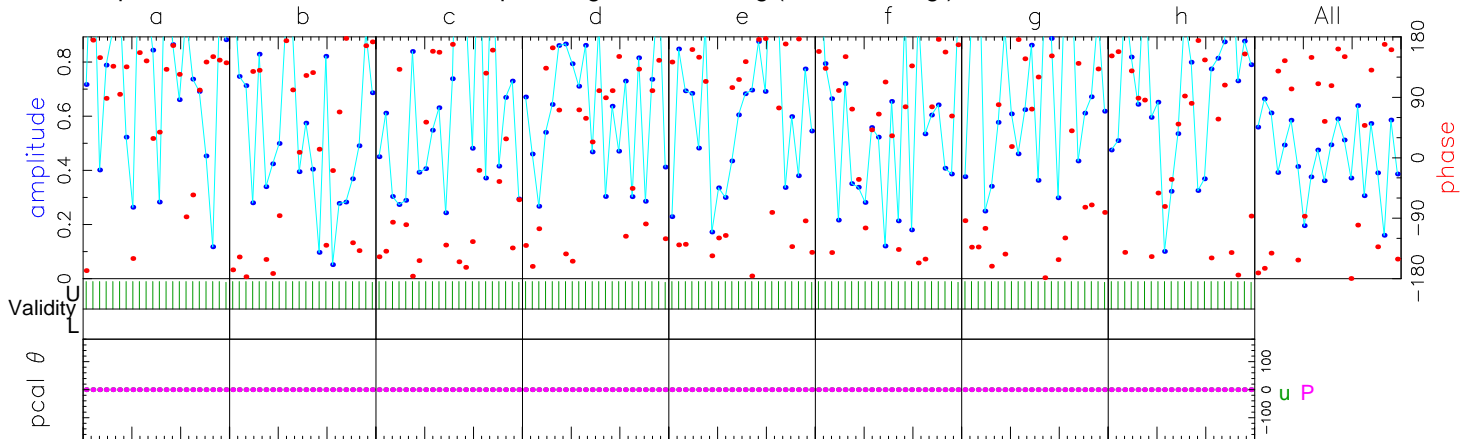


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134820  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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
	141.1	175.4	-160.1	140.5	-174.3	138.2	-163.6	146.1	Phase	164.1
	0.5	0.4	0.3	0.3	0.3	0.3	0.2	0.3	Ampl.	0.3
	257.5	256.9	345.0	255.3	351.8	255.0	255.7	257.0	Sbd box	256.6
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
P	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
P	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
P	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

Group delay (usec)(sbd)	5.36080108060E+03	Apriori delay (usec)	5.36080171256E+03	Resid mbdelay (usec)	-6.31961E-04	+/-	9.9E-05
Sband delay (usec)	5.36080006531E+03	Apriori clock (usec)	2.6995916E+00	Resid sbdelay (usec)	-1.64725E-03	+/-	7.9E-04
Phase delay (usec)	5.36080171785E+03	Apriori clockrate (us/s)	7.9999999E-07	Resid phdelay (usec)	5.29302E-06	+/-	3.4E-07
Delay rate (us/s)	1.12183490942E+00	Apriori rate (us/s)	1.12183497812E+00	Resid rate (us/s)	-6.87032E-08	+/-	3.3E-09
Total phase (deg)	351.3	Apriori accel (us/s/s)	-3.05736458366E-05	Resid phase (deg)	164.1	+/-	10.5

ph/seg (deg)	57.4	RMS	24.6	Theor.	0.298 +/- 0.027	PCal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5		
amp/seg (%)	71.1	Search (1024X32)	0.290	Interp.	0.000	PCal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000		
ph/frq (deg)	28.9	Inc. seg. avg.	0.422	Inc. frq. avg.	0.311	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008	
amp/frq (%)	26.8	Inc. frq. avg.	0.311	Sample rate (MSamp/s):	128	Data rate (Mb/s):	2048	nlags: 256	t_cohere infinite	dr window (ns/s)	-0.011 0.011
u: az 36.2 el 28.1 pa -67.5		P: az 337.3 el 13.0 pa 36.3		u, v (fr/asec)	-12325.472 -3966.123	ion window (TEC)	0.00 0.00			simultaneous interpolator	

Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uP..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uP.W.435.1HRBHI

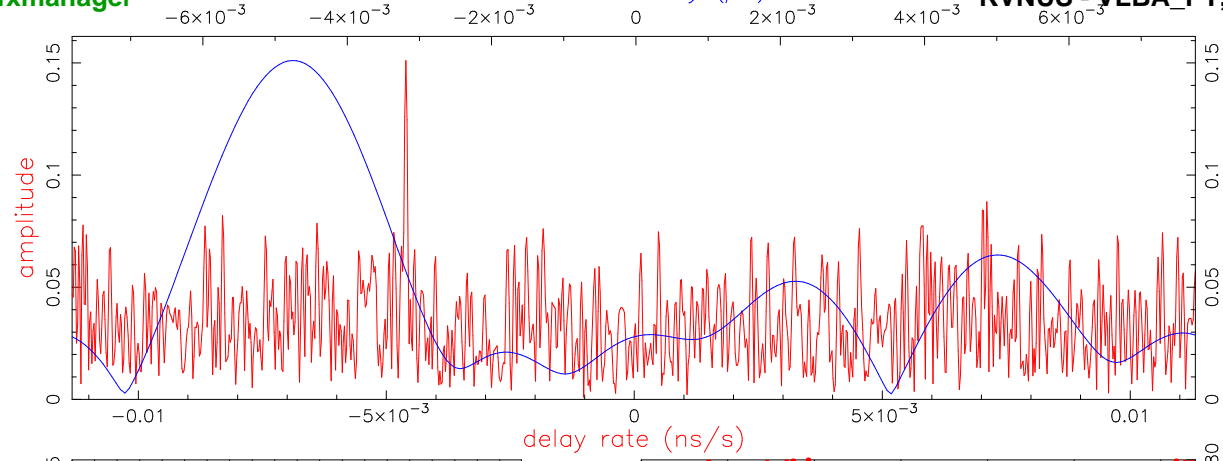
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

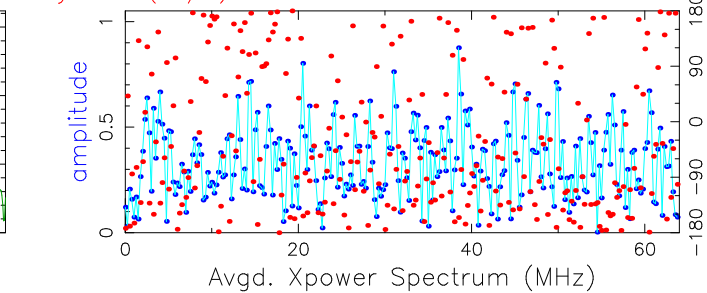
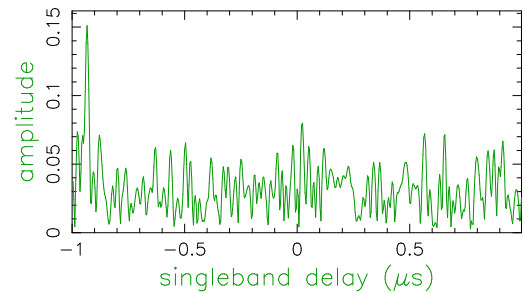
0102+584.1HRBHI, No0113, up

KVNUS - VLBA\_PT, fgroup W, pol LR

multiband delay ( $\mu$ s)

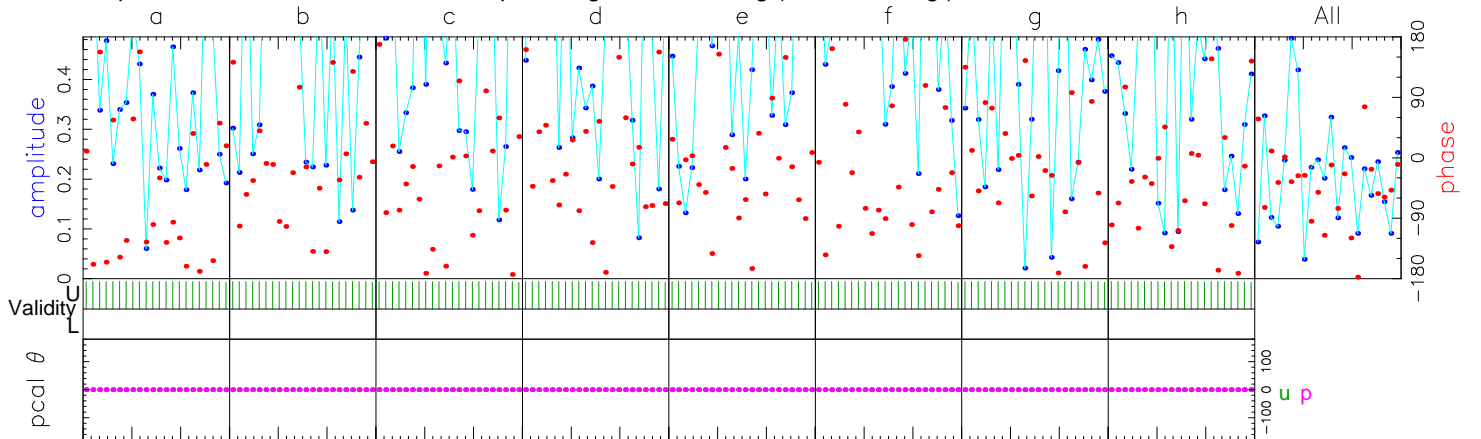


Fringe quality 0  
 SNR 5.5  
 Int time 179.975  
 Amp 0.162  
 Phase -40.0  
 PFD 9.7e-01  
 Delays (us)  
 SBD -0.933576  
 MBD -0.004752  
 Fringe rate (Hz)  
 -0.396905  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134820  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"



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
	-122.0	-22.3	-56.8	-31.8	-34.4	-55.9	-9.1	-66.8	Phase	-40.0
	0.1	0.2	0.1	0.2	0.2	0.1	0.2	0.2	Ampl.	0.2
	489.3	478.4	459.5	34.2	112.5	90.4	455.9	32.7	Sbd box	18.0
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
p	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
p	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
p	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	-8.13176637180E+03		Apriori delay (usec)		-8.13083974459E+03		Resid mbdelay (usec)		-4.75220E-03	+/- 2.0E-04
Sband delay (usec)	-8.13177332009E+03		Apriori clock (usec)		2.4750004E+00		Resid sbdelay (usec)		-9.33576E-01	+/- 1.6E-03
Phase delay (usec)	-8.13083974588E+03		Apriori clockrate (us/s)		0.0000000E+00		Resid phdelay (usec)		-1.28999E-06	+/- 6.7E-07
Delay rate (us/s)	9.91131632188E-01		Apriori rate (us/s)		9.91136239863E-01		Resid rate (us/s)		-4.60768E-06	+/- 6.4E-09
Total phase (deg)			Apriori accel (us/s/s)		4.49420005701E-05		Resid phase (deg)		-40.0	+/- 20.7

ph/seg (deg) 55.2 48.5 Search (1024X32) 0.149 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 82.1 84.6 Interp. 0.000 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 39.5 29.2 Inc. seg. avg. 0.166 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 37.1 51.0 Inc. frq. avg. 0.158 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 u: az 36.2 el 28.1 pa -67.5 p: az 330.3 el 59.0 pa 127.8 u,v (fr/asec) -10830.560 5892.394 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/up..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/up.W.436.1HRBHI

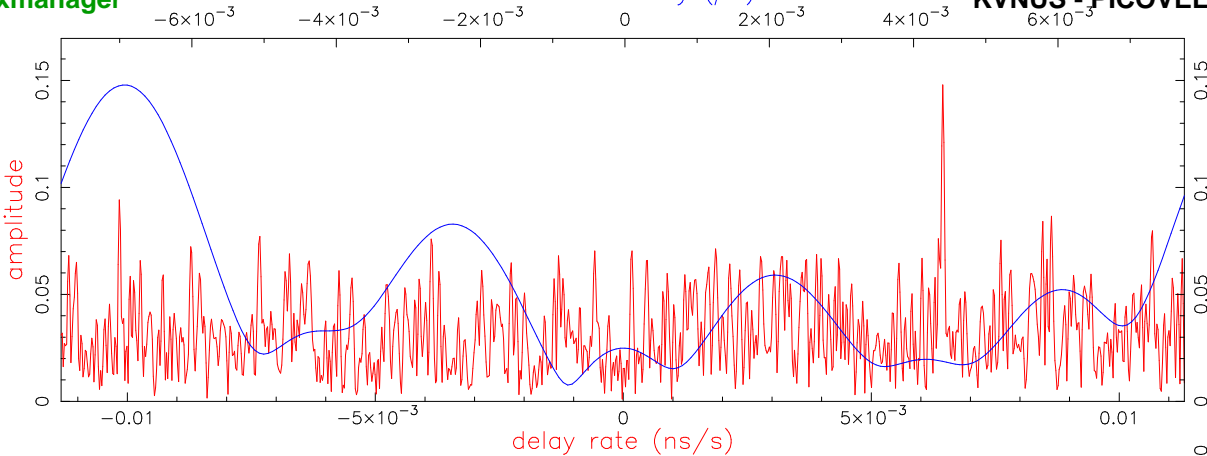
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, uP

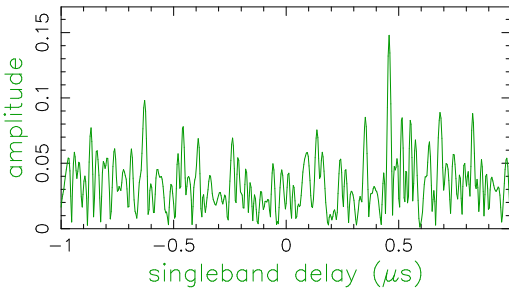
KVNUS - PICOVEL, fgroup W, pol RL

multiband delay ( $\mu$ s)

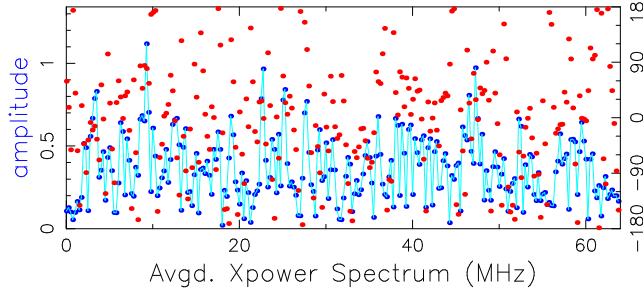


Fringe quality 0

SNR 5.4  
 Int time 179.793  
 Amp 0.170  
 Phase -46.7  
 PFD 1.0e+00  
 Delays (us)  
 SBD 0.457207  
 MBD -0.006922  
 Fringe rate (Hz)  
 0.555748  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

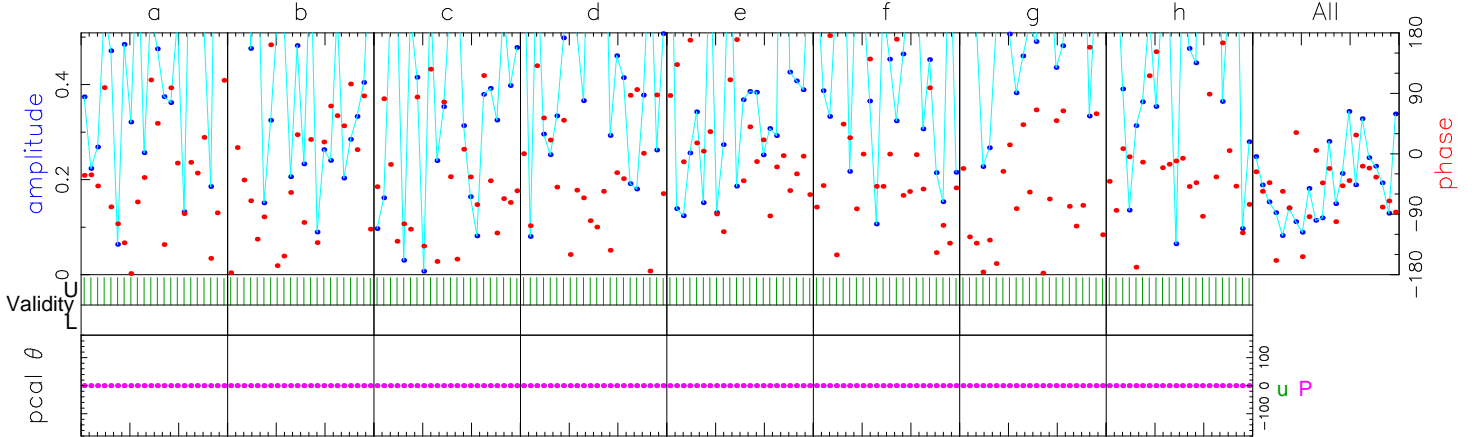


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134821  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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
	-38.6	-50.1	-76.6	-61.6	4.3	-55.2	-79.5	-37.5	Phase	-46.7
	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.3	Ampl.	0.2
	424.7	239.6	4.2	143.8	283.3	127.3	457.3	374.9	Sbd box	374.0
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
P	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:P	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
P	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
P	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd)	5.36126354063E+03	Apriori delay (usec)	5.36080171256E+03	Resid mbdelay (usec)	-6.92193E-03	+/-	2.0E-04
Sband delay (usec)	5.36125891956E+03	Apriori clock (usec)	2.6995916E+00	Resid sbdelay (usec)	4.57207E-01	+/-	1.6E-03
Phase delay (usec)	5.36080171105E+03	Apriori clockrate (us/s)	7.9999999E-07	Resid phdelay (usec)	-1.50625E-06	+/-	6.8E-07
Delay rate (us/s)	1.12184142980E+00	Apriori rate (us/s)	1.12183497812E+00	Resid rate (us/s)	6.45168E-06	+/-	6.5E-09
Total phase (deg)	140.5	Apriori accel (us/s/s)	-3.05736458366E-05	Resid phase (deg)	-46.7	+/-	21.1

ph/seg (deg)	47.9	Theor.	49.5	Amplitude	0.170 +/- 0.031	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
amp/seg (%)	59.9	Search (1024X32)	0.140	Interp.	0.000	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
ph/frq (deg)	28.9	Inc. seg. avg.	0.159	Inc. frq. avg.	0.166	Bits/sample: 2x2	mb window (us) -0.008 0.008
amp/frq (%)	43.4	Inc. frq. avg.	0.166			Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
						Data rate(Mb/s): 2048	ion window (TEC) 0.00 0.00
						nlags: 256	t_cohere infinite

u: az 36.2 el 28.1 pa -67.5 P: az 337.3 el 13.0 pa 36.3 u,v (fr/asec) -12325.472 -3966.123 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uP..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uP.W.451.1HRBHI

Mk4/DiFX fourfit 3.21 rev 2937

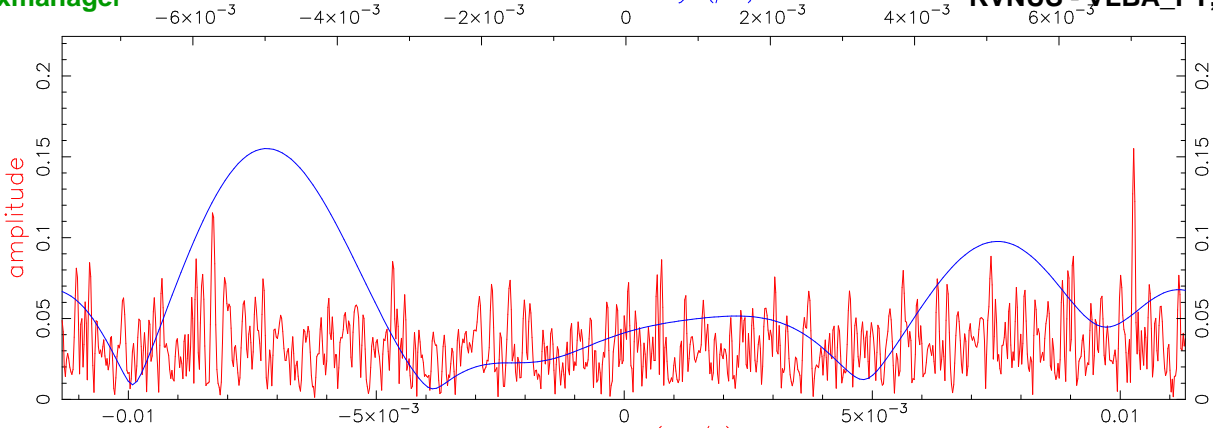
fxmanager

0102+584.1HRBHI, No0113, up

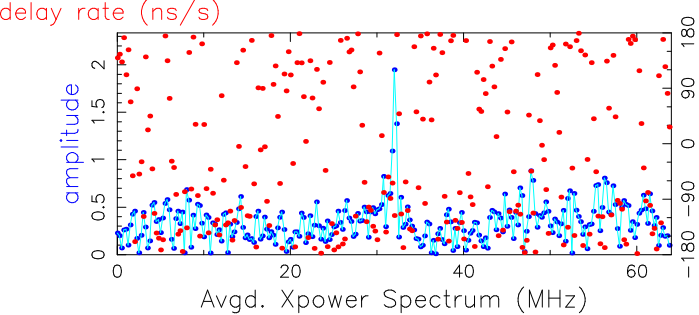
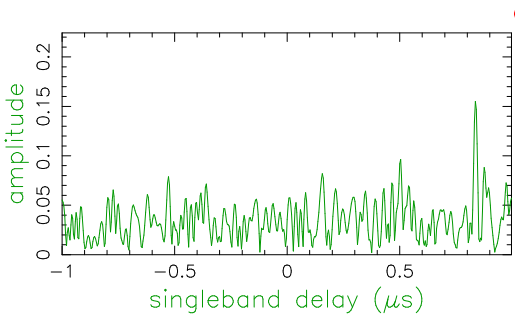
KVNUS - VLBA\_PT, fgroup W, pol RL

multiband delay ( $\mu$ s)

Fringe quality 0

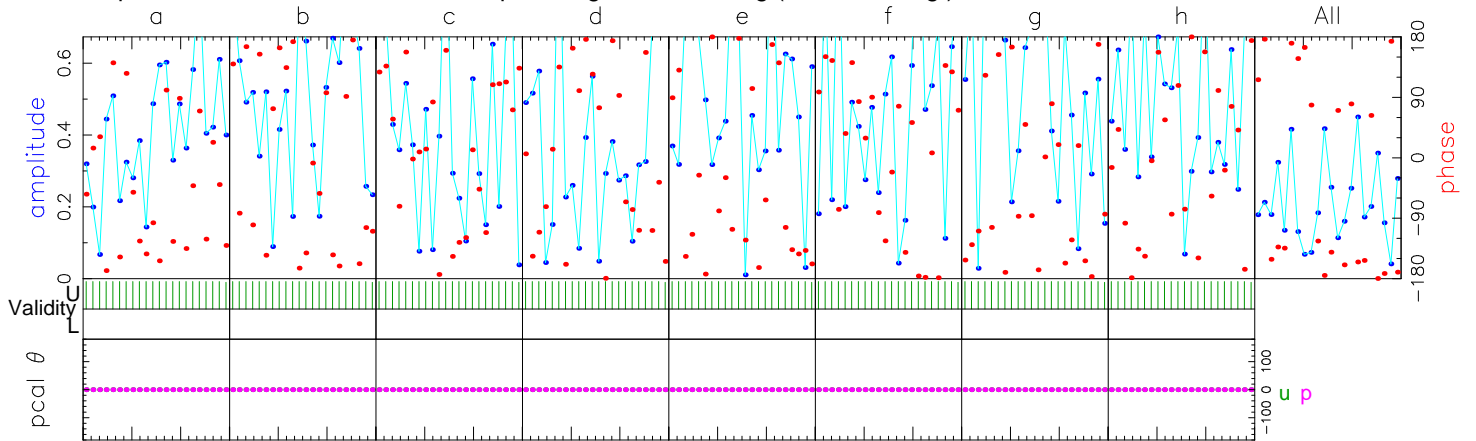


SNR 5.7  
 Int time 179.975  
 Amp 0.224  
 Phase -176.2  
 PFD 7.4e-01  
 Delays (us)  
 SBD 0.836817  
 MBD -0.004973  
 Fringe rate (Hz)  
 0.885881  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134822  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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		
u	1000	1000	1000	1000	1000	1000	1000	1000		
p	1000	1000	1000	1000	1000	1000	1000	1000		
u:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u:p	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u	1000	1000	1000	1000	1000	1000	1000	1000		
p	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
p	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	-8.13000096724E+03	-8.13000292759E+03	-8.13083975027E+03	9.91146524060E-01						
Sband delay (usec)										
Phase delay (usec)										
Delay rate (us/s)										
Total phase (deg)										
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)										
simultaneous interpolator										

u: az 36.2 el 28.1 pa -67.5      p: az 330.3 el 59.0 pa 127.8      u,v (fr/asec) -10830.560 5892.394      simultaneous interpolator  
 Control file: cf\_1234\_gmva      Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/up...1HRBHI      Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/up.W.458.1HRBHI

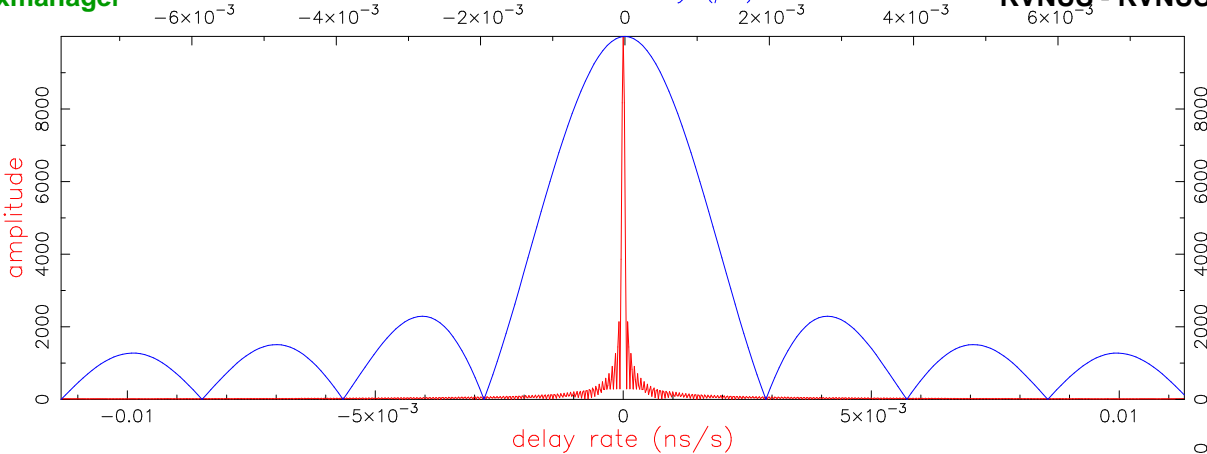
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, uu

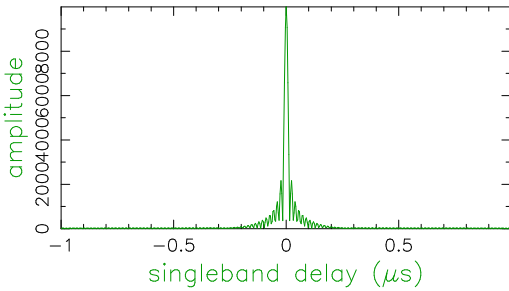
KVNU<sub>3</sub> - KVNU<sub>5</sub>, fgroup W, pol LL

multiband delay ( $\mu$ s)

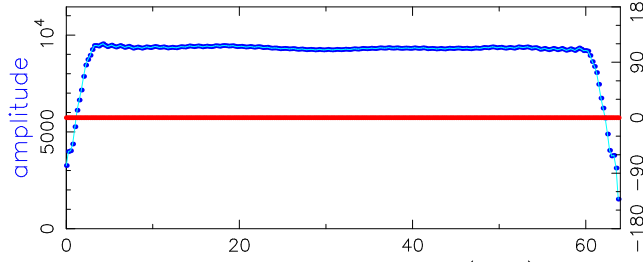


Fringe quality 9

SNR 366871.6  
 Int time 179.984  
 Amp 9999.999  
 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

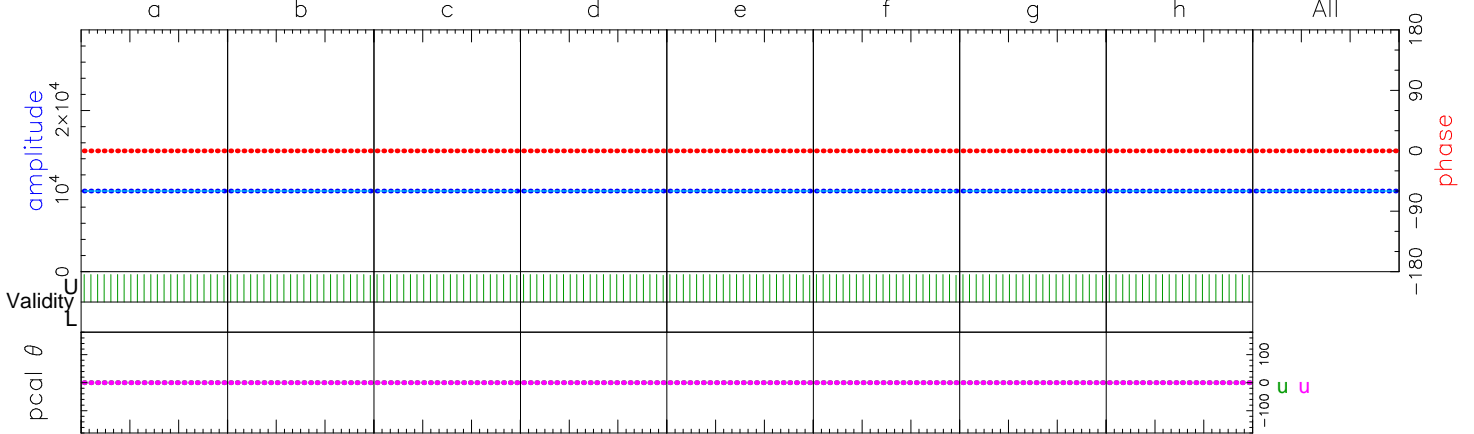


delay rate (ns/s)



Exp. c202a  
 Yr:day 16383  
 Start 2020:283  
 Stop 2020:283  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134816  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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

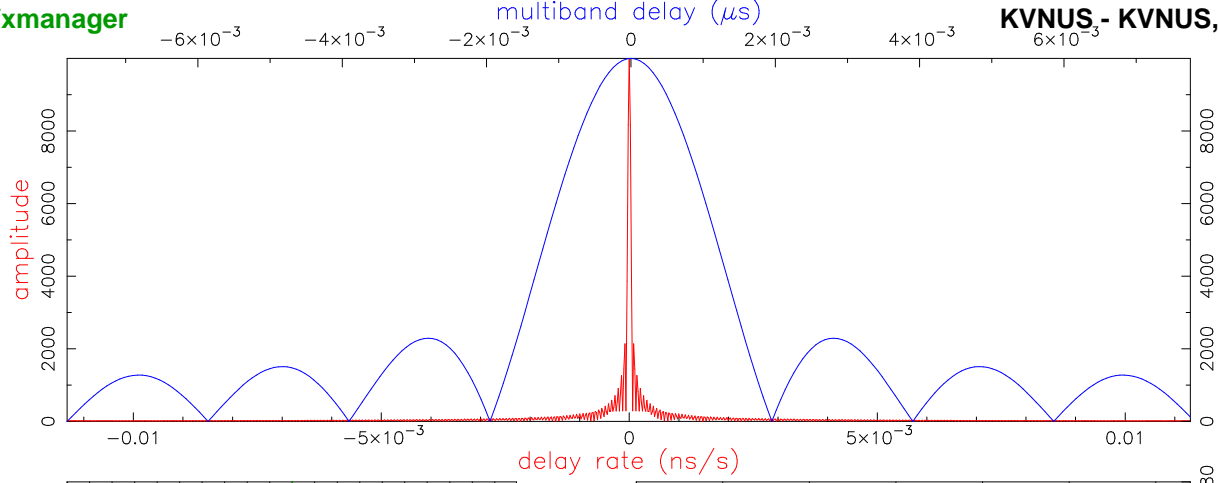


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0		
u	1000	1000	1000	1000	1000	1000	1000	1000		
u:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u	1000	1000	1000	1000	1000	1000	1000	1000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

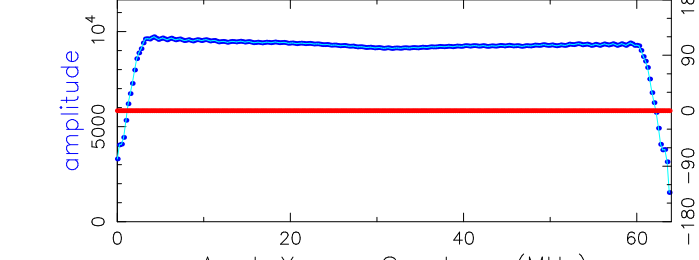
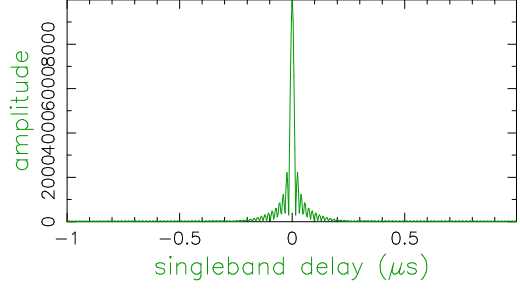
Group delay (usec)(sbd) 0.0000000000E+00 Apriori delay (usec) 0.0000000000E+00 Resid mbdelay (usec) 0.00000E+00 +/- 3.0E-09  
 Sband delay (usec) 0.0000000000E+00 Apriori clock (usec) 0.0000000E+00 Resid sbdelay (usec) 0.00000E+00 +/- 2.3E-08  
 Phase delay (usec) 0.0000000000E+00 Apriori clockrate (us/s) 0.0000000E+00 Resid phdelay (usec) 0.00000E+00 +/- 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 9999.999 +/- 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. 9999.999 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00

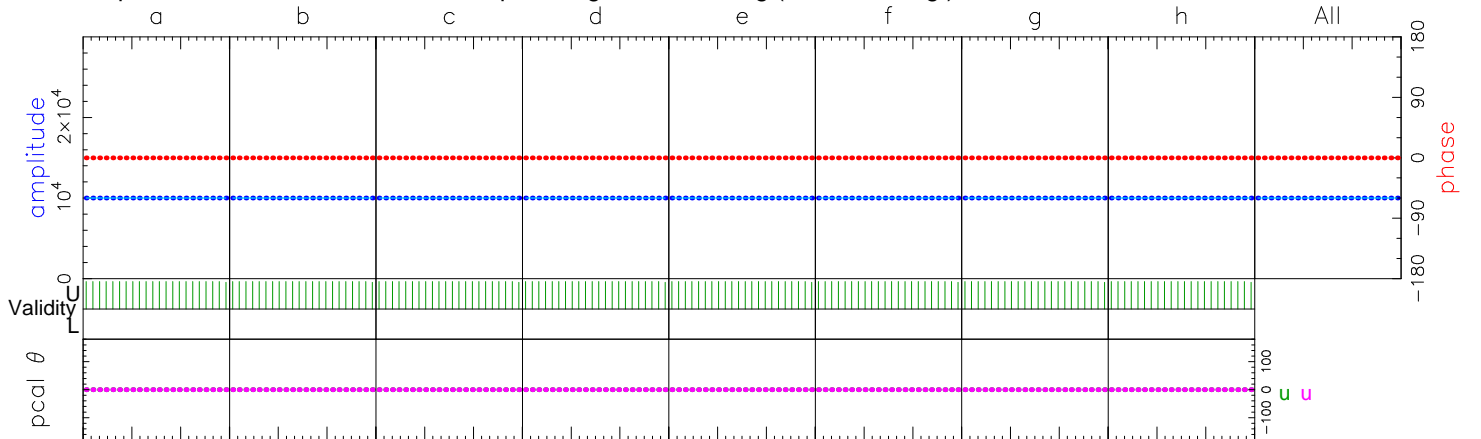
u: az 36.2 el 28.1 pa -67.5 u: az 36.2 el 28.1 pa -67.5 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uu...1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uu.W.410.1HRBHI



Fringe quality 9  
SNR 366871.6  
Int time 179.984  
Amp 9999.999  
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. c202a  
Yr:day 16383  
Start 2020:283  
Stop 2020:283  
FRT 090130.00  
Corr/FF/build  
2021:006:172908  
2021:010:134817  
2020:247:085004  
RA & Dec (J2000)  
01h02m45.762375s  
+58°24'11.136621"



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

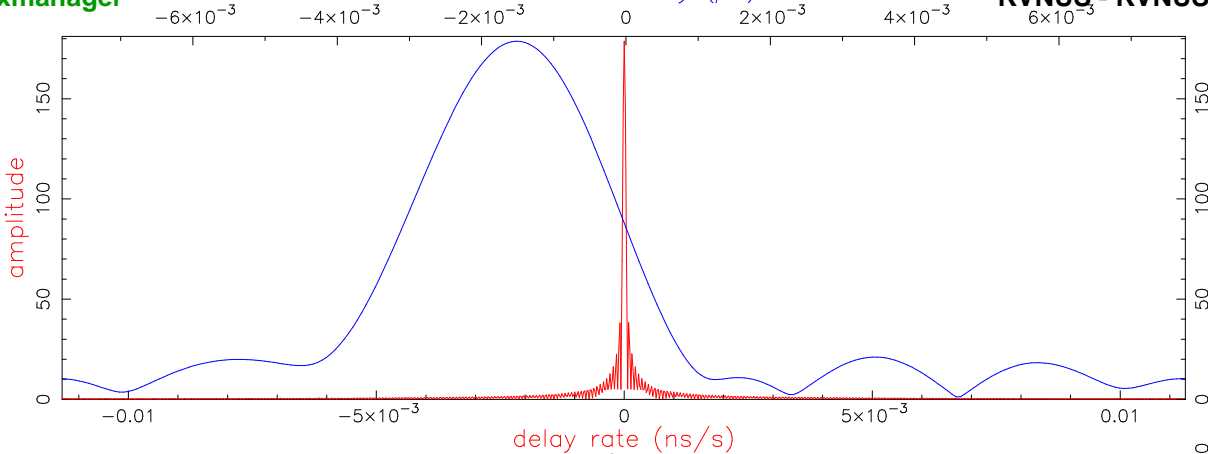


	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	10000.0	10000.0
u	1000	1000	1000	1000	1000	1000	1000	1000	10000.0	10000.0
u:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	257.0	257.0
u:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	10000.0	10000.0
u	1000	1000	1000	1000	1000	1000	1000	1000	10000.0	10000.0
u	1000	1000	1000	1000	1000	1000	1000	1000	10000.0	10000.0
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	257.0	257.0
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	10000.0	10000.0
Group delay (usec)(sbd)	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000E+00	+/- 3.0E-09
Sband delay (usec)	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000E+00	+/- 2.3E-08
Phase delay (usec)	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000E+00	+/- 1.0E-11
Delay rate (us/s)	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000000000E+00	0.000000E+00	+/- 9.7E-14
Total phase (deg)			0.0						0.0	+/- 0.0

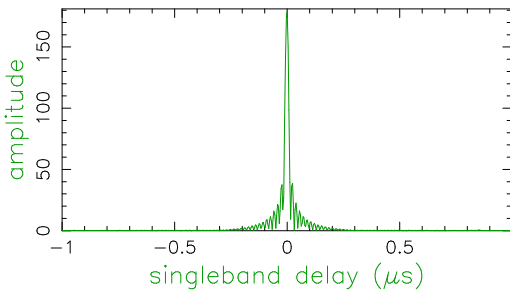
ph/seg (deg) 0.0 0.0 Theor. Amplitude 9999.999 +/- 0.027 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
amp/seg (%) 0.0 0.0 Search (1024X32) 9999.999 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
ph/frq (deg) 0.0 0.0 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
amp/frq (%) 0.0 0.0 Inc. seg. avg. 10000.000 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
u: az 36.2 el 28.1 pa -67.5 u: az 36.2 el 28.1 pa -67.5 u,v (fr/asec) 0.000 0.000 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uu...1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uu.W.416.1HRBHI

multiband delay ( $\mu$ s)

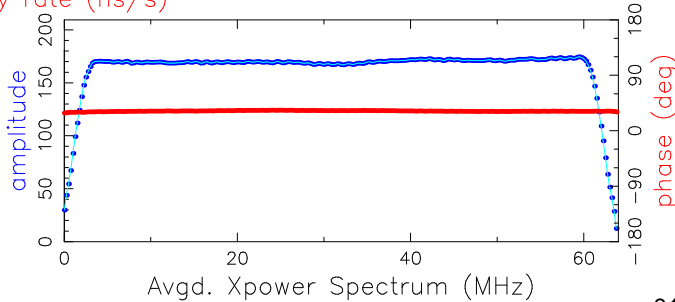
Fringe quality 6



SNR 6645.5  
Int time 179.984  
Amp 181.139  
Phase 32.8  
PFD 0.0e+00  
Delays (us)  
SBD -0.001467  
MBD -0.001529  
Fringe rate (Hz)  
-0.000001  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512

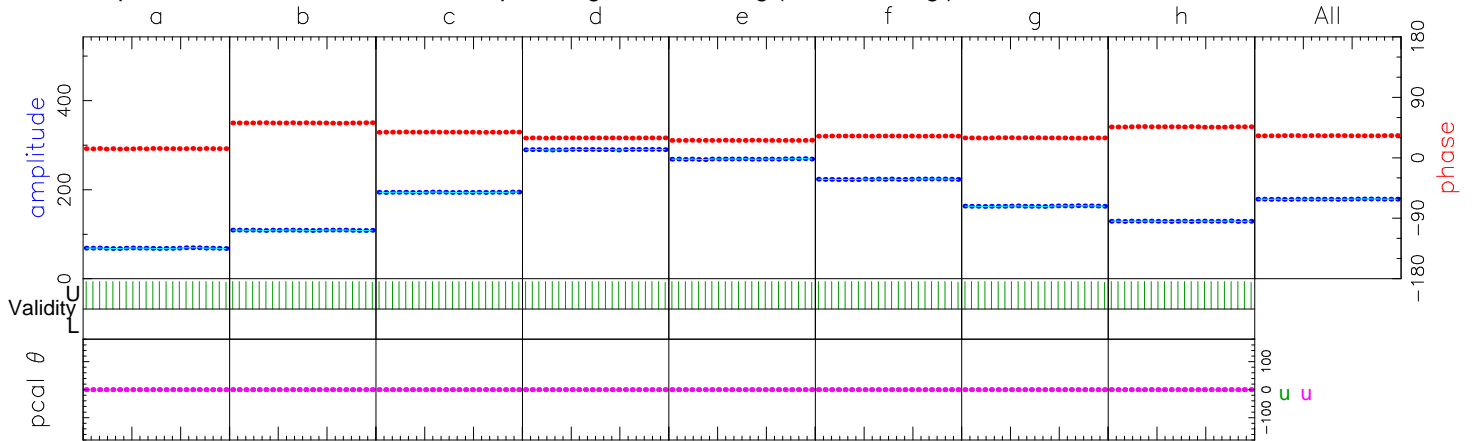


delay rate (ns/s)



Exp. c202a  
Exper # 16383  
Yr:day 2020:283  
Start 090000.00  
Stop 090300.22  
FRT 090130.00  
Corr/FF/build  
2021:006:172908  
2021:010:134819  
2020:247:085004  
RA & Dec (J2000)  
01h02m45.762375s  
+58°24'11.136621"

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		
u	1000	1000	1000	1000	1000	1000	1000	1000		
u:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u	1000	1000	1000	1000	1000	1000	1000	1000		
u	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		

Group delay (usec)(sbd) -1.52893750000E-03 Apriori delay (usec) 0.00000000000E+00 Resid mbdelay (usec) -1.52894E-03 +/- 1.6E-07  
 Sband delay (usec) -1.46750000000E-03 Apriori clock (usec) 0.0000000E+00 Resid sbdelay (usec) -1.46750E-03 +/- 1.3E-06  
 Phase delay (usec) 1.05856723196E-06 Apriori clockrate (us/s) 0.0000000E+00 Resid phdelay (usec) 1.05857E-06 +/- 5.6E-10  
 Delay rate (us/s) -1.13369219133E-11 Apriori rate (us/s) 0.00000000000E+00 Resid rate (us/s) -1.13369E-11 +/- 5.3E-12  
 Total phase (deg) 32.8 Apriori accel (us/s/s) 0.00000000000E+00 Resid phase (deg) 32.8 +/- 0.0

RMS Theor. Amplitude 181.139 +/- 0.027 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 ph/seg (deg) 0.1 0.0 Search (1024X32) 178.633 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 amp/seg (%) 1.3 0.1 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 ph/frq (deg) 12.9 0.0 Inc. seg. avg. 178.732 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 amp/frq (%) 40.2 0.0 Inc. frq. avg. 180.827 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00

u: az 36.2 el 28.1 pa -67.5 u: az 36.2 el 28.1 pa -67.5 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uu..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uu.W.431.1HRBHI

Mk4/DiFX fourfit 3.21 rev 2937

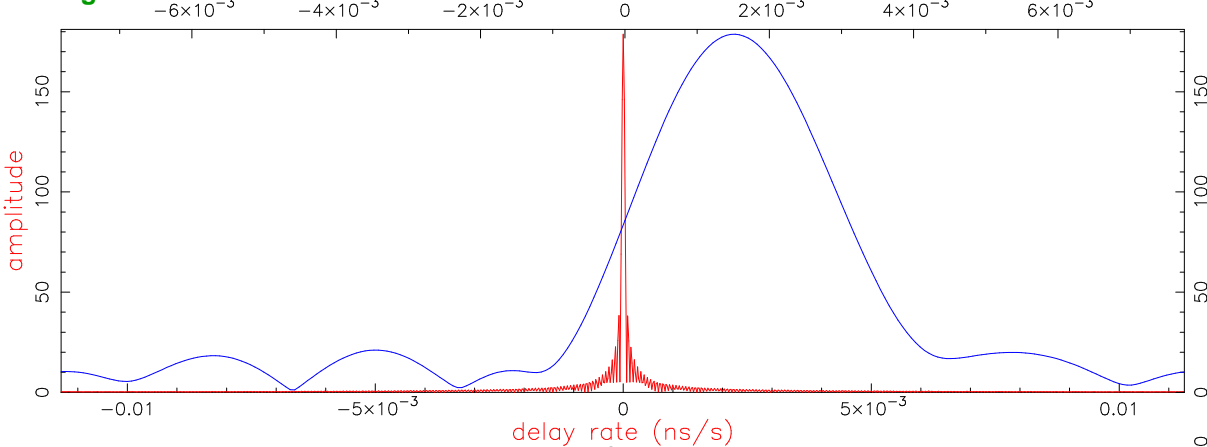
fxmanager

0102+584.1HRBHI, No0113, uu

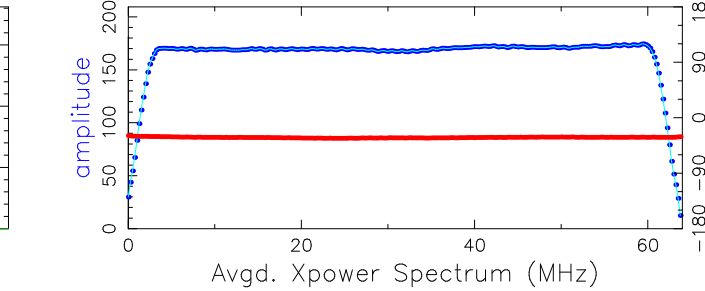
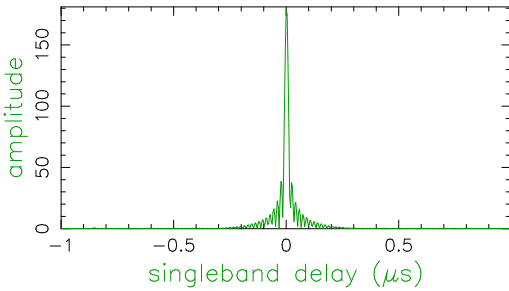
KVNUS - KVNUS, fgroup W, pol RL

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

Fringe quality 6

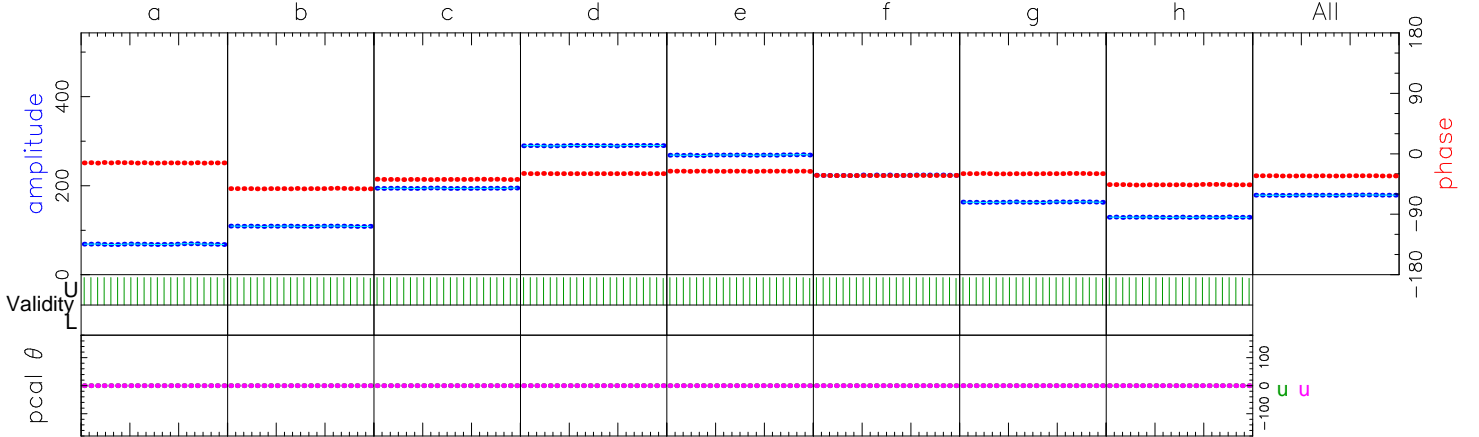


SNR 6645.5  
 Int time 179.984  
 Amp 181.139  
 Phase -32.8  
 PFD 0.0e+00  
 Delays (us)  
 SBD 0.001467  
 MBD 0.001529  
 Fringe rate (Hz) 0.000001  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134822  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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		
u	1000	1000	1000	1000	1000	1000	1000	1000	APs used	
u:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC freqs	
u:u	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u	1000	1000	1000	1000	1000	1000	1000	1000	Mani PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd) 1.52893750000E-03 Apriori delay (usec) 0.00000000000E+00 Resid mbdelay (usec) 1.52894E-03 +/- 1.6E-07  
 Sband delay (usec) 1.46750000000E-03 Apriori clock (usec) 0.0000000E+00 Resid sbdelay (usec) 1.46750E-03 +/- 1.3E-06  
 Phase delay (usec) -1.05856723171E-06 Apriori clockrate (us/s) 0.0000000E+00 Resid phdelay (usec) -1.05857E-06 +/- 5.6E-10  
 Delay rate (us/s) 1.13369219133E-11 Apriori rate (us/s) 0.00000000000E+00 Resid rate (us/s) 1.13369E-11 +/- 5.3E-12  
 Total phase (deg) -32.8 Apriori accel (us/s/s) 0.00000000000E+00 Resid phase (deg) -32.8 +/- 0.0

RMS Theor. Amplitude 181.139 +/- 0.027 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 ph/seg (deg) 0.1 0.0 Search (1024X32) 178.633 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 amp/seg (%) 1.3 0.1 Interp. 0.000 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 ph/frq (deg) 12.9 0.0 Inc. seg. avg. 178.732 Sample rate(MISamp/s): 128 dr window (ns/s) -0.011 0.011  
 amp/frq (%) 40.2 0.0 Inc. frq. avg. 180.827 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite ion window (TEC) 0.00 0.00

u: az 36.2 el 28.1 pa -67.5 u: az 36.2 el 28.1 pa -67.5 u,v (fr/asec) 0.000 0.000 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uu..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uu.W.457.1HRBHI

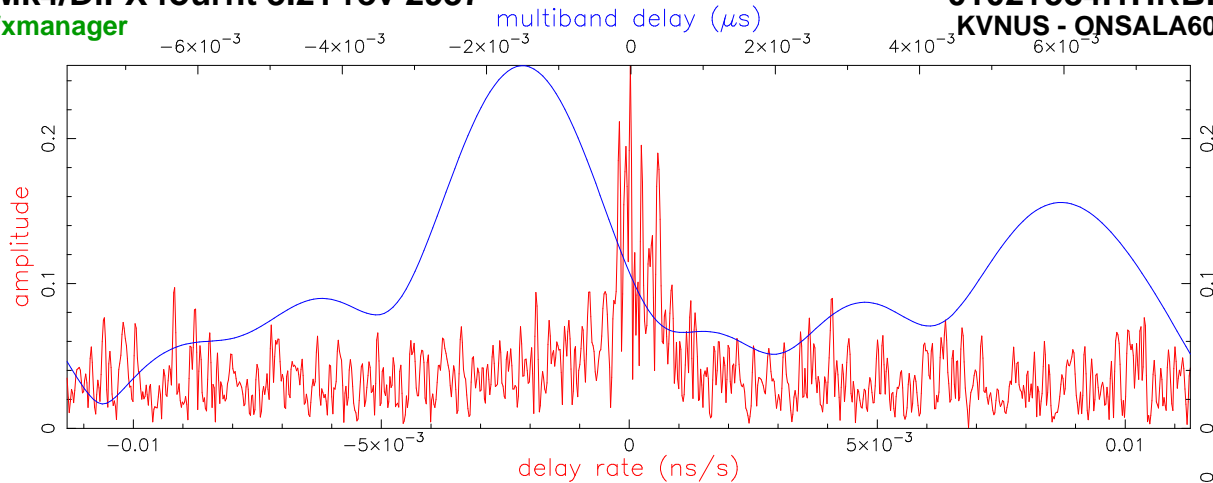


Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

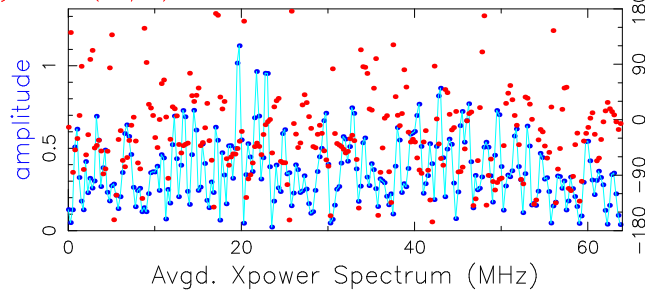
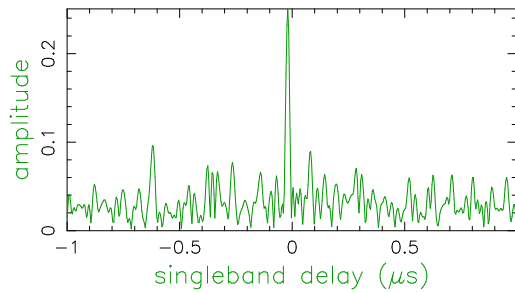
0102+584.1HRBHI, No0113, uX

KVNUS - ONSALA60, fgroup W, pol LL



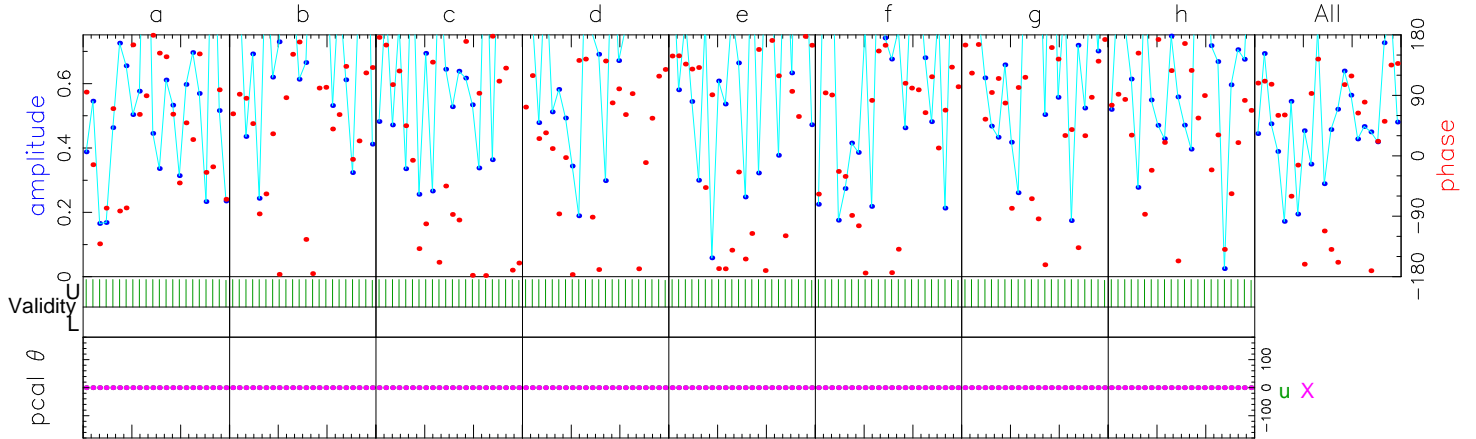
Fringe quality 9

SNR 9.2  
 Int time 179.953  
 Amp 0.251  
 Phase 117.0  
 PFD 7.5e-12  
 Delays (us)  
 SBD -0.019881  
 MBD -0.001509  
 Fringe rate (Hz)  
 0.001226  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134816  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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		
u	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
u:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		

Group delay (usec)(sbd)	-5.67812679823E+01	Apriori delay (usec)	-5.67641338757E+01	Resid mbdelay (usec)	-1.50911E-03	+/-	1.2E-04
Sband delay (usec)	-5.67840153757E+01	Apriori clock (usec)	-4.5769714E+01	Resid sbdelay (usec)	-1.98815E-02	+/-	9.4E-04
Phase delay (usec)	-5.67641301038E+01	Apriori clockrate (us/s)	-1.2800004E-07	Resid phdelay (usec)	3.77191E-06	+/-	4.0E-07
Delay rate (us/s)	8.79803267953E-01	Apriori rate (us/s)	8.79803253715E-01	Resid rate (us/s)	1.42378E-08	+/-	3.9E-09
Total phase (deg)	-60.2	Apriori accel (us/s/s)	-2.50877504722E-05	Resid phase (deg)	117.0	+/-	12.5

ph/seg (deg)	74.5	Theor.	29.2	Amplitude	0.251 +/- 0.027	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5		
amp/seg (%)	115.9		51.0	Search (1024X32)	0.242	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000		
ph/frq (deg)	48.8		17.6	Interp.	0.000	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008	
amp/frq (%)	40.9		30.8	Inc. seg. avg.	0.433	Sample rate (MSamp/s):	128	dr window (ns/s)	-0.011 0.011		
				Inc. frq. avg.	0.309	Data rate (Mb/s):	2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00 0.00

u: az 36.2 el 28.1 pa -67.5 X: az 342.4 el 28.4 pa 18.3 u,v (fr/asec) -9665.907 -4383.665 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uX..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uX.W.412.1HRBHI

Mk4/DiFX fourfit 3.21 rev 2937

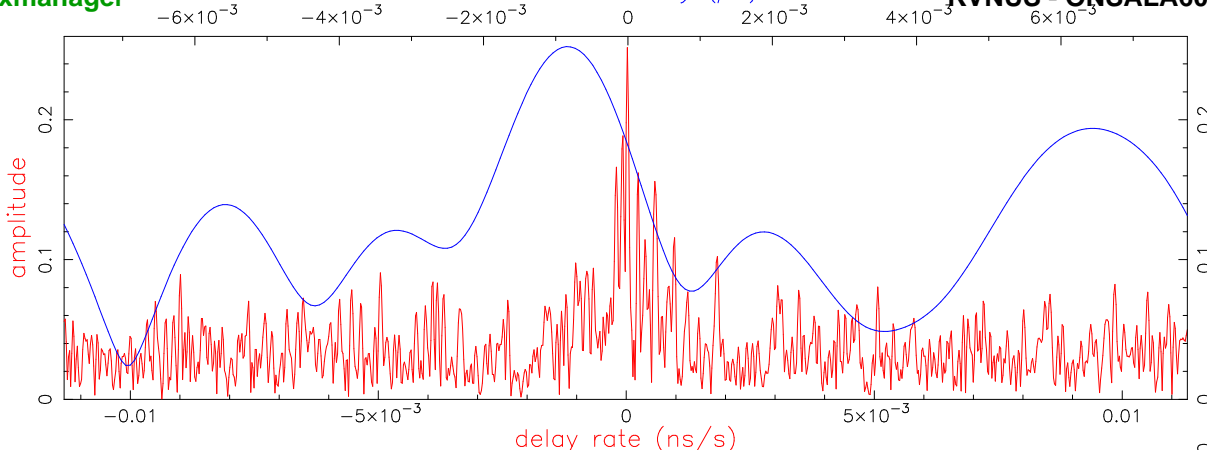
fxmanager

0102+584.1HRBHI, No0113, uX

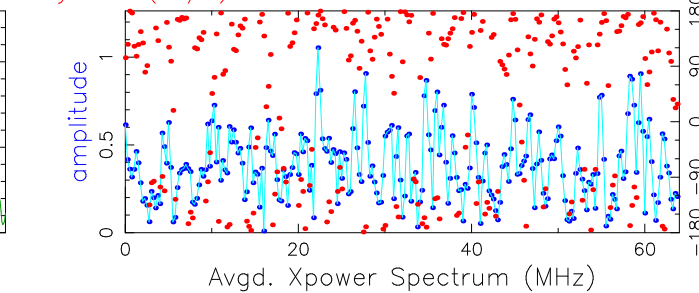
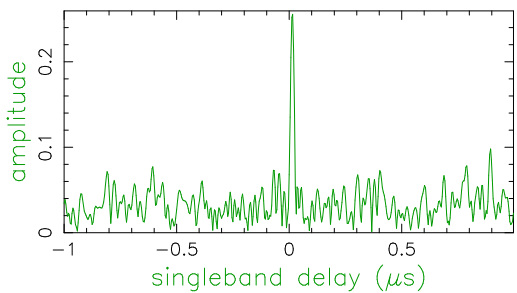
KVNUS - ONSALA60, fgroup W, pol RR

multiband delay ( $\mu$ s)

Fringe quality 9

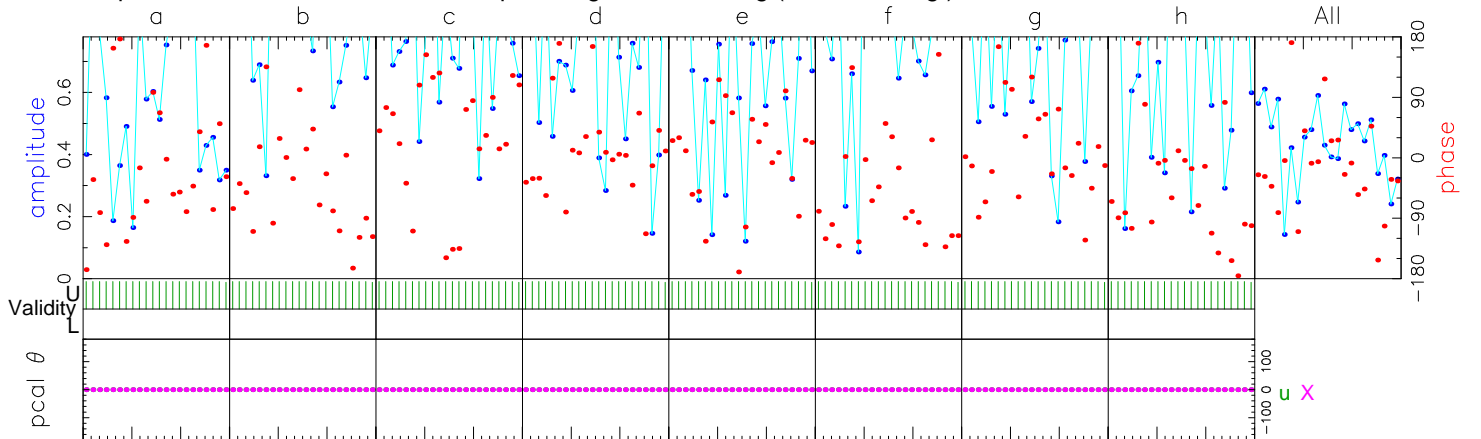


SNR 9.5  
 Int time 179.953  
 Amp 0.260  
 Phase -23.8  
 PFD 3.3e-13  
 Delays (us)  
 SBD 0.014004  
 MBD -0.000756  
 Fringe rate (Hz)  
 0.001386  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134818  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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
	-54.4	-45.4	78.9	-11.8	24.8	-81.2	5.7	-76.4	Phase	-23.8
	0.3	0.5	0.3	0.4	0.4	0.4	0.4	0.3	Ampl.	0.4
	260.7	261.2	258.7	259.2	259.4	259.8	259.8	258.4	Sbd box	260.6
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
X	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
X	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

Group delay (usec)(sbd)	-5.67492647323E+01	Apriori delay (usec)	-5.67641338757E+01	Resid mbdelay (usec)	-7.55857E-04	+/-	1.1E-04
Sband delay (usec)	-5.67501293757E+01	Apriori clock (usec)	-4.5769714E+01	Resid sbdelay (usec)	1.40045E-02	+/-	9.0E-04
Phase delay (usec)	-5.67641346419E+01	Apriori clockrate (us/s)	-1.2800004E-07	Resid phdelay (usec)	-7.66196E-07	+/-	3.9E-07
Delay rate (us/s)	8.79803269809E-01	Apriori rate (us/s)	8.79803253715E-01	Resid rate (us/s)	1.60942E-08	+/-	3.7E-09
Total phase (deg)	-200.9	Apriori accel (us/s/s)	-2.50877504722E-05	Resid phase (deg)	-23.8	+/-	12.0

ph/seg (deg)	66.7	Theor.	28.2	Amplitude	0.260 +/- 0.027	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5			
amp/seg (%)	81.9		49.2	Search (1024X32)	0.247	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000		
ph/frq (deg)	59.7		17.0	Inc. seg. avg.	0.389	Bits/sample: 2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008	
amp/frq (%)	49.6		29.7	Inc. frq. avg.	0.363	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

u: az 36.2 el 28.1 pa -67.5 X: az 342.4 el 28.4 pa 18.3 u,v (fr/asec) -9665.907 -4383.665 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uX..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uX.W.419.1HRBHI

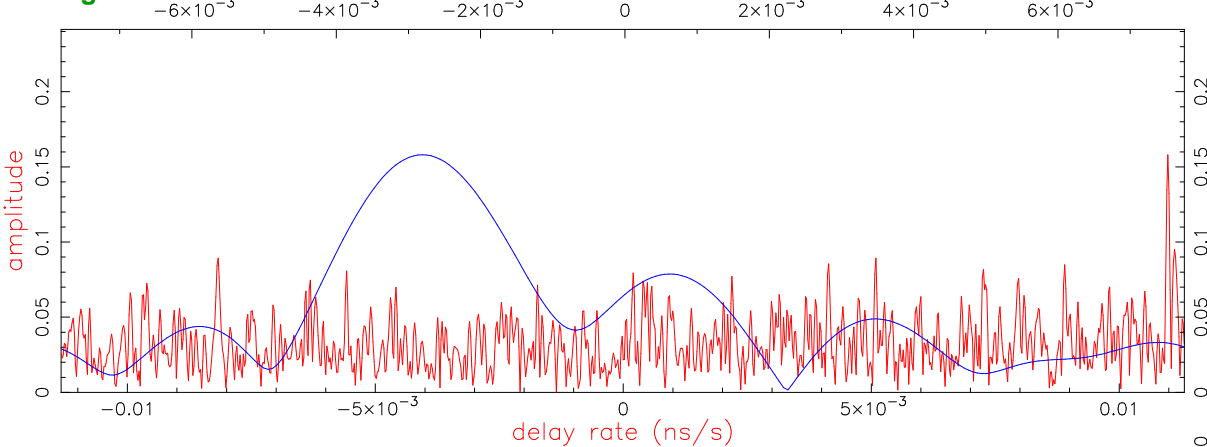
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, uX

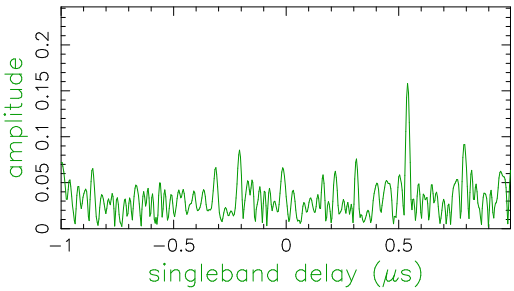
KVNUS - ONSALA60, fgroup W, pol LR

multiband delay ( $\mu$ s)

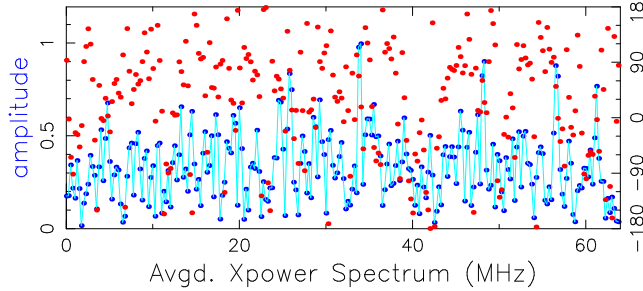


Fringe quality 0

SNR 5.8  
 Int time 179.953  
 Amp 0.241  
 Phase -176.1  
 PFD 5.6e-01  
 Delays (us)  
 SBD 0.539447  
 MBD -0.002796  
 Fringe rate (Hz)  
 0.948056  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

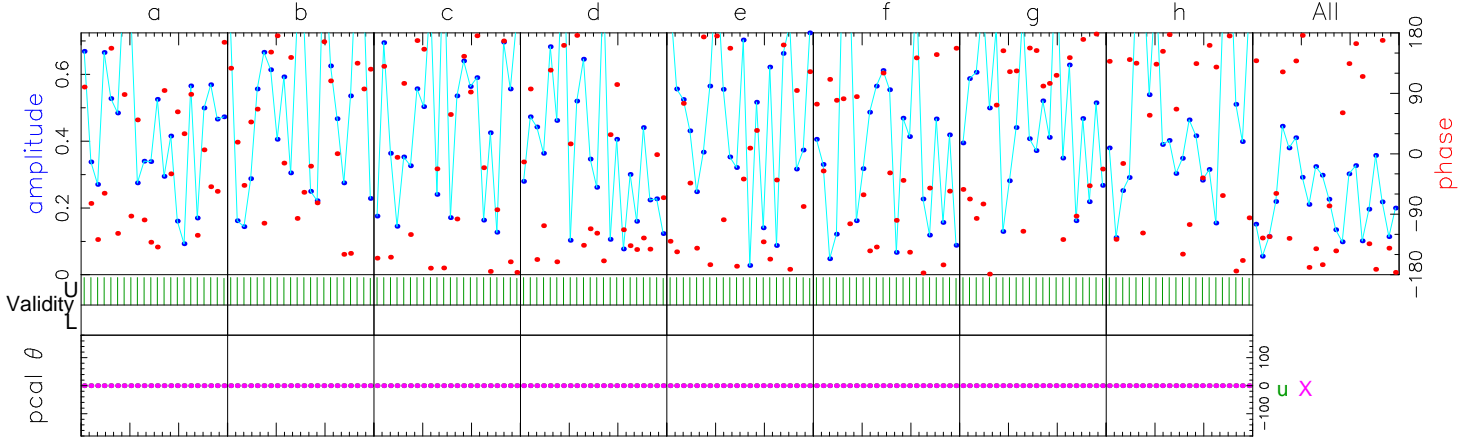


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134820  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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		
u	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
u:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
X	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)	-5.62200547935E+01									
Sband delay (usec)	-5.62246871257E+01									
Phase delay (usec)	-5.67641395548E+01									
Delay rate (us/s)	8.79814259708E-01									
Total phase (deg)			-353.3							
Apriori delay (usec)										
Apriori clock (usec)										
Apriori clockrate (us/s)										
Apriori rate (us/s)										
Apriori accel (us/s/s)										
Resid mbdelay (usec)										
Resid sbdelay (usec)										
Resid phdelay (usec)										
Resid rate (us/s)										
Resid phase (deg)										
Pcal mode: MANUAL, MANUAL										
Pcal rate: 0.000E+00, 0.000E+00 (us/s)										
Bits/sample: 2x2										
Sample rate(MISamp/s): 128										
Data rate(Mb/s): 2048										
sb window (us)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
pcal mode: MANUAL, MANUAL										
PC period (AP's) 5, 5										
sb window (us)										
mb window (us)										
dr window (ns/s)										
ion window (TEC)										
u, v (fr/asec)										
simultaneous interpolator										

u: az 36.2 el 28.1 pa -67.5 X: az 342.4 el 28.4 pa 18.3 u, v (fr/asec) -9665.907 -4383.665 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uX..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uX.W.440.1HRBHI

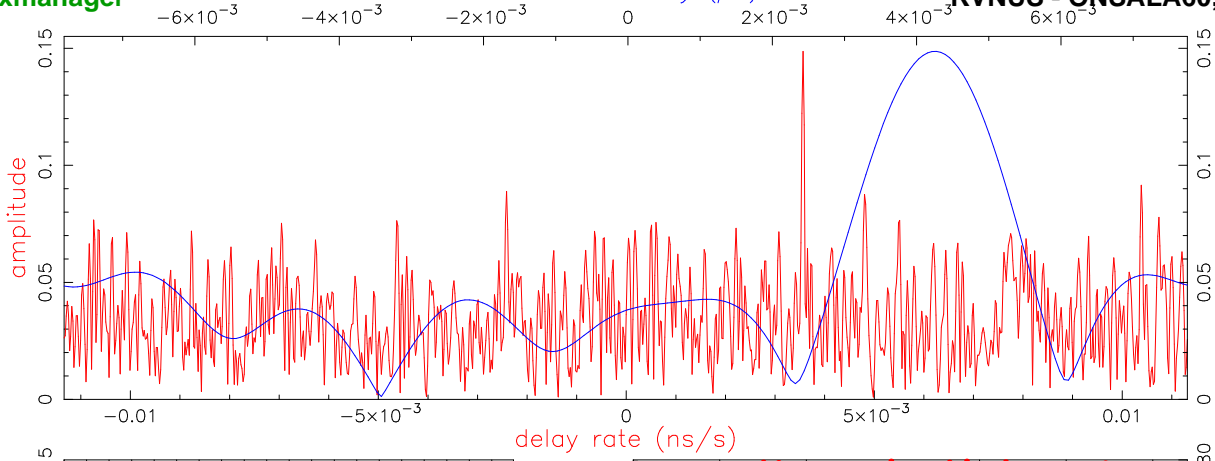
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

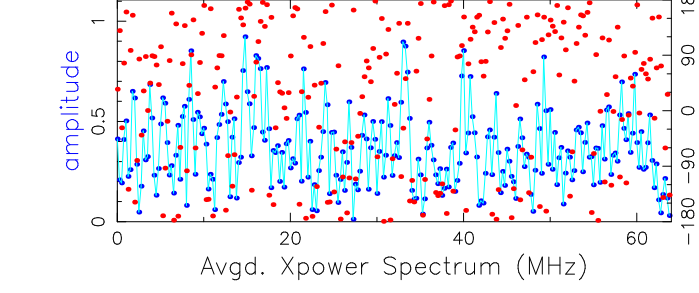
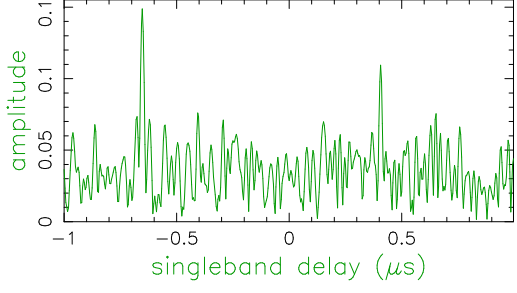
0102+584.1HRBHI, No0113, uX

KVNUS - ONSALA60, fgroup W, pol RL

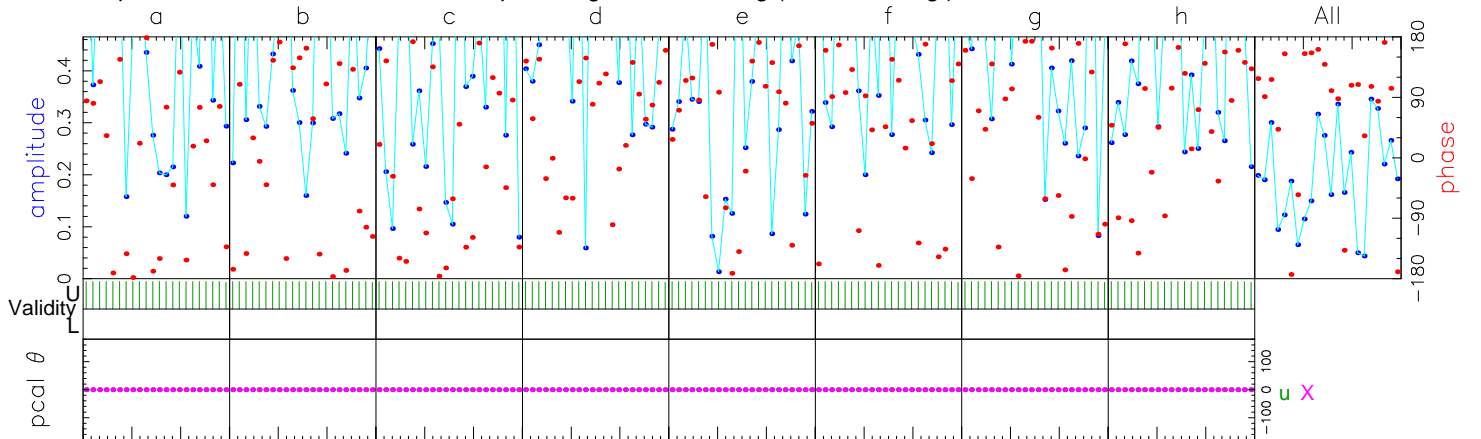
multiband delay ( $\mu\text{s}$ )



Fringe quality 0  
 SNR 5.5  
 Int time 179.953  
 Amp 0.155  
 Phase 125.2  
 PFD 1.0e+00  
 Delays (us)  
 SBD -0.652723  
 MBD 0.004251  
 Fringe rate (Hz) 0.307364  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134823  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"



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		
u	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
u:X	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u	1000	1000	1000	1000	1000	1000	1000	1000		
X	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
X	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	-5.74161327571E+01				-5.67641338757E+01				4.25112E-03	+/- 2.0E-04
Sband delay (usec)	-5.74168573757E+01				-4.5769714E+01				-6.52723E-01	+/- 1.6E-03
Phase delay (usec)	-5.67641298370E+01				-1.2800004E-07				4.03874E-06	+/- 6.8E-07
Delay rate (us/s)	8.79806821901E-01				8.79803253715E-01				3.56819E-06	+/- 6.5E-09
Total phase (deg)			-51.9		-2.50877504722E-05				125.2	+/- 21.0
	RMS	Theor.	Amplitude	0.155 +/- 0.028	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5				
ph/seg (deg)	59.5	49.2	Search (1024X32)	0.147	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000	1.000		
amp/seg (%)	70.4	85.9	Interp.	0.000	Bits/sample: 2x2	SampCntNorm: enabled	mb window (us)	-0.008	0.008	
ph/frq (deg)	29.4	29.7	Inc. seg. avg.	0.151	Sample rate(MISamp/s): 128		dr window (ns/s)	-0.011	0.011	
amp/frq (%)	20.8	51.8	Inc. frq. avg.	0.152	Data rate(Mb/s): 2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00	0.00
u: az 36.2 el 28.1 pa -67.5			X: az 342.4 el 28.4 pa 18.3		u,v (fr/asec) -9665.907 -4383.665					simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uX..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uX.W.462.1HRBHI

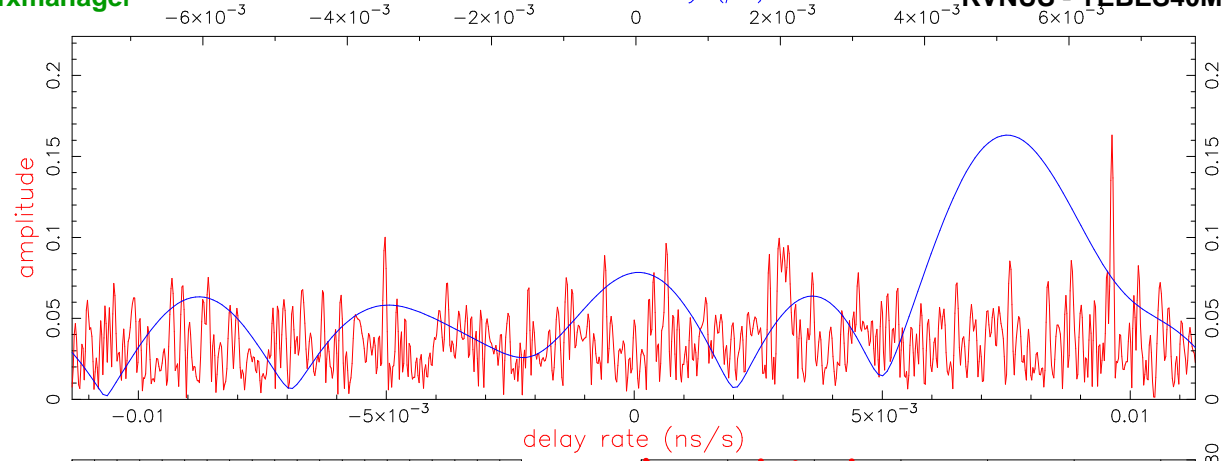
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

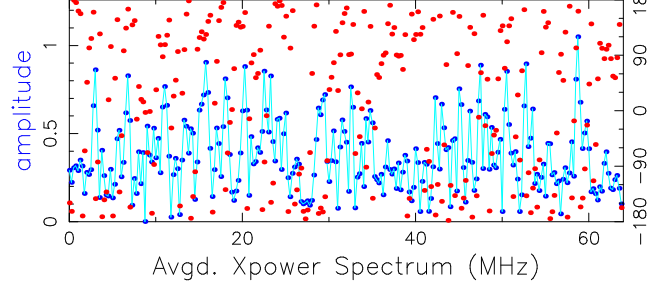
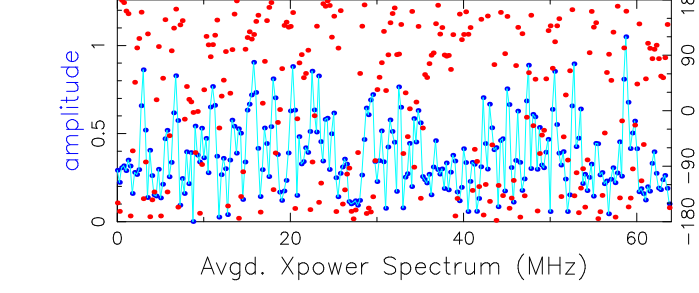
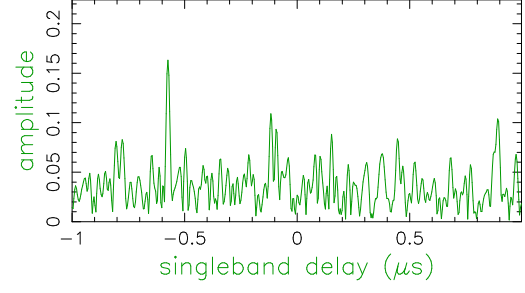
0102+584.1HRBHI, No0113, uY

KVNUS - YEBES40M, fgroup W, pol LL

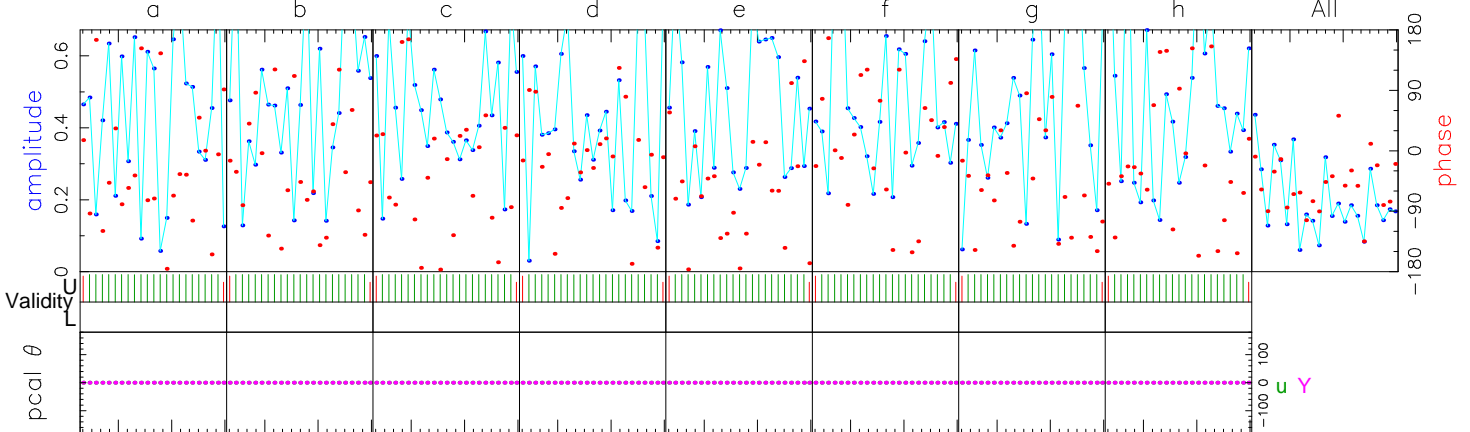
multiband delay ( $\mu\text{s}$ )



Fringe quality 0  
 SNR 5.7  
 Int time 162.097  
 Amp 0.224  
 Phase -42.2  
 PFD 8.1e-01  
 Delays (us)  
 SBD -0.574368  
 MBD 0.005145  
 Fringe rate (Hz)  
 0.830485  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512  
 Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090016.90  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134818  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"



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
	-53.4	-48.2	-55.1	-13.1	-52.3	27.6	-59.9	-84.4	Phase	-42.2
	0.4	0.3	0.2	0.3	0.3	0.3	0.2	0.2	Ampl.	0.2
	485.0	105.1	125.0	226.0	202.9	385.9	290.2	51.2	Sbd box	110.0
U/L	319/0	319/0	319/0	319/0	319/0	319/0	319/0	319/0	APs used	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
u	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)	4.23750675648E+03	Apriori delay (usec)	4.23807973662E+03	Resid mbdelay (usec)	5.14486E-03	+/-	1.9E-04
Sband delay (usec)	4.23750536837E+03	Apriori clock (usec)	-9.1556301E+00	Resid sbdelay (usec)	-5.74368E-01	+/-	1.5E-03
Phase delay (usec)	4.23807973526E+03	Apriori clockrate (us/s)	2.7999998E-07	Resid phdelay (usec)	-1.36031E-06	+/-	6.5E-07
Delay rate (us/s)	1.09756303047E+00	Apriori rate (us/s)	1.09755338936E+00	Resid rate (us/s)	9.64111E-06	+/-	6.9E-09
Total phase (deg)	142.4	Apriori accel (us/s/s)	-2.91753254315E-05	Resid phase (deg)	-42.2	+/-	20.2

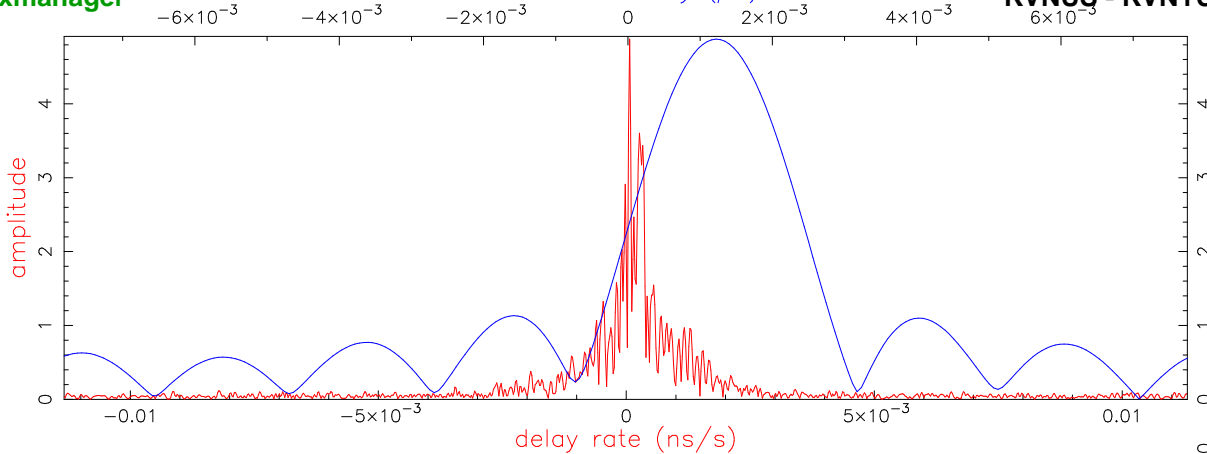
ph/seg (deg)	41.2	Theor.	48.4	Amplitude	0.224 +/- 0.039	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5		
amp/seg (%)	64.9	Search (1024X32)	0.157	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		sb window (us)	-1.000 1.000		
ph/frq (deg)	37.1	Interp.	0.000	Bits/sample: 2x2		SampCntNorm: enabled	mb window (us)	-0.008 0.008	
amp/frq (%)	34.0	Inc. seg. avg.	0.204	Sample rate(MISamp/s): 128		dr window (ns/s)	-0.011 0.011		
		Inc. frq. avg.	0.232	Data rate(Mb/s): 2048		nlags: 256	t_cohere infinite	ion window (TEC)	0.00 0.00

u: az 36.2 el 28.1 pa -67.5 Y: az 337.1 el 16.1 pa 34.3 u,v (fr/asec) -12057.840 -4004.825 simultaneous interpolator

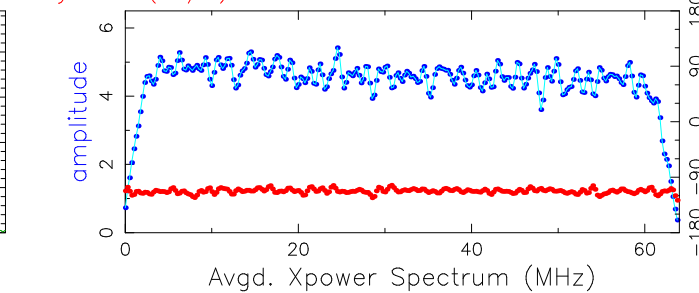
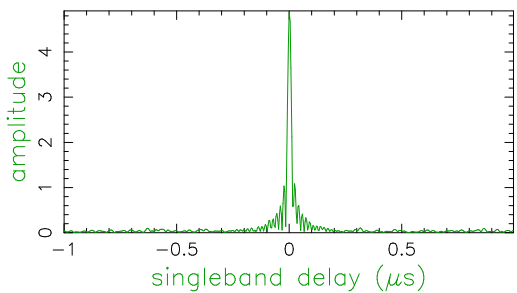
Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uY..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uY.W.421.1HRBHI

multiband delay ( $\mu$ s)

Fringe quality 5

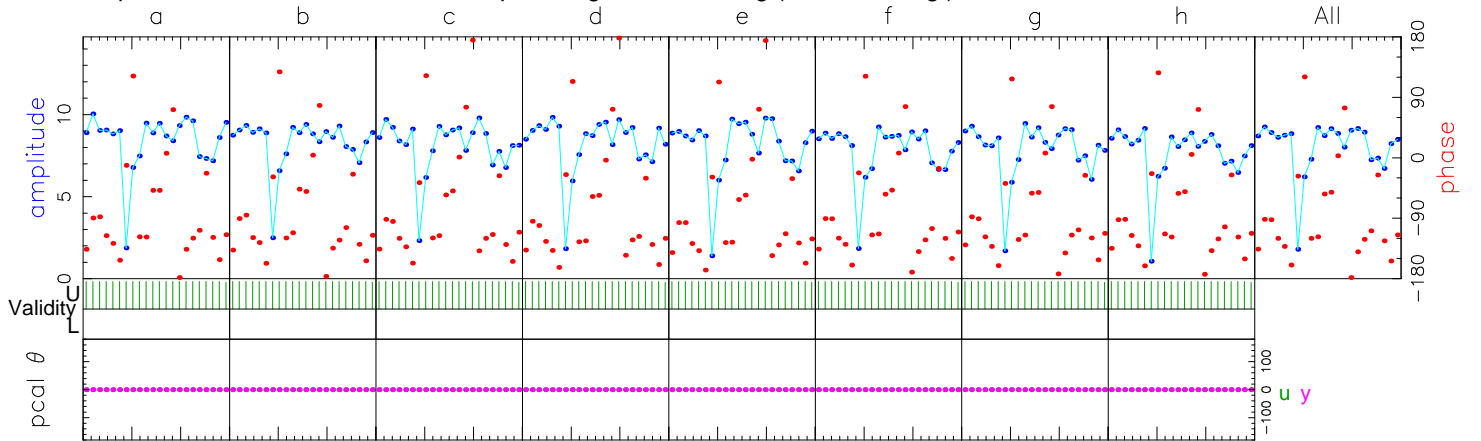


SNR 180.2  
Int time 179.952  
Amp 4.913  
Phase -114.1  
PFD 0.0e+00  
Delays (us)  
SBD 0.001106  
MBD 0.001225  
Fringe rate (Hz)  
0.005420  
Ion TEC 0.000  
Ref freq (MHz)  
86140.0000  
AP (sec) 0.512



Exp. c202a  
Exper # 16383  
Yr:day 2020:283  
Start 090000.00  
Stop 090300.22  
FRT 090130.00  
Corr/FF/build  
2021:006:172908  
2021:010:134819  
2020:247:085004  
RA & Dec (J2000)  
01h02m45.762375s  
+58°24'11.136621"

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		
u	1000	1000	1000	1000	1000	1000	1000	1000		
y	1000	1000	1000	1000	1000	1000	1000	1000		
u:y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u:y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u	1000	1000	1000	1000	1000	1000	1000	1000		
y	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		

Group delay (usec)(sbd)	-1.68244641299E+02	Apriori delay (usec)	-1.68245866510E+02	Resid mbdelay (usec)	1.22521E-03	+/-	6.0E-06
Sband delay (usec)	-1.68244760510E+02	Apriori clock (usec)	1.2822275E+00	Resid sbdelay (usec)	1.10600E-03	+/-	4.8E-05
Phase delay (usec)	-1.68245870189E+02	Apriori clockrate (us/s)	2.9999999E-07	Resid phdelay (usec)	-3.67820E-06	+/-	2.1E-08
Delay rate (us/s)	1.87925727510E-02	Apriori rate (us/s)	1.87925098339E-02	Resid rate (us/s)	6.29171E-08	+/-	2.0E-10
Total phase (deg)	-92.9	Apriori accel (us/s/s)	-1.82110108059E-06	Resid phase (deg)	-114.1	+/-	0.6

ph/seg (deg)	64.8	RMS	Theor.	Amplitude	4.913 +/- 0.027	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5		
amp/seg (%)	72.0	64.8	1.5	Search (1024X32)	4.719	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000		
ph/frq (deg)	3.9	72.0	2.6	Interp.	0.000	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008	
amp/frq (%)	2.8	3.9	0.9	Inc. seg. avg.	8.062	Sample rate (MSamp/s):	128	dr window (ns/s)	-0.011 0.011		
		2.8	1.6	Inc. frq. avg.	4.884	Data rate (Mb/s):	2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00 0.00

u: az 36.2 el 28.1 pa -67.5 y: az 36.3 el 28.6 pa -64.4 u,v (fr/asec) -207.393 -363.546 simultaneous interpolator  
Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uy..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uy.W.428.1HRBHI

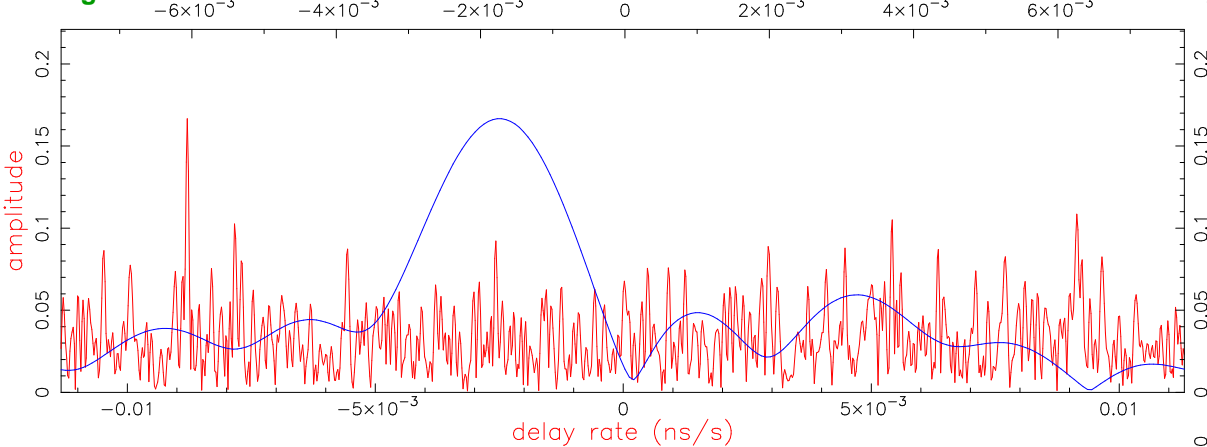
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, uY

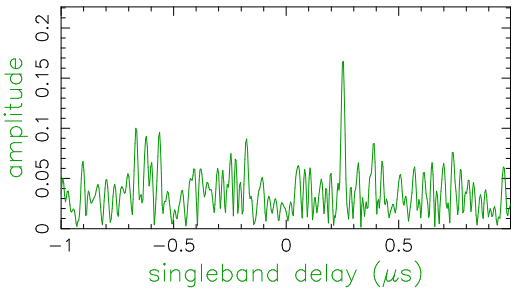
KVNUS - YEBES40M, fgroup W, pol RR

multiband delay ( $\mu$ s)

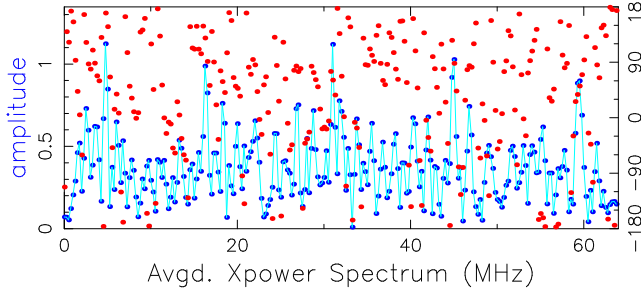


Fringe quality 0

SNR 5.9  
 Int time 162.097  
 Amp 0.221  
 Phase 126.6  
 PFD 3.3e-01  
 Delays (us)  
 SBD 0.252042  
 MBD -0.001705  
 Fringe rate (Hz)  
 -0.758673  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

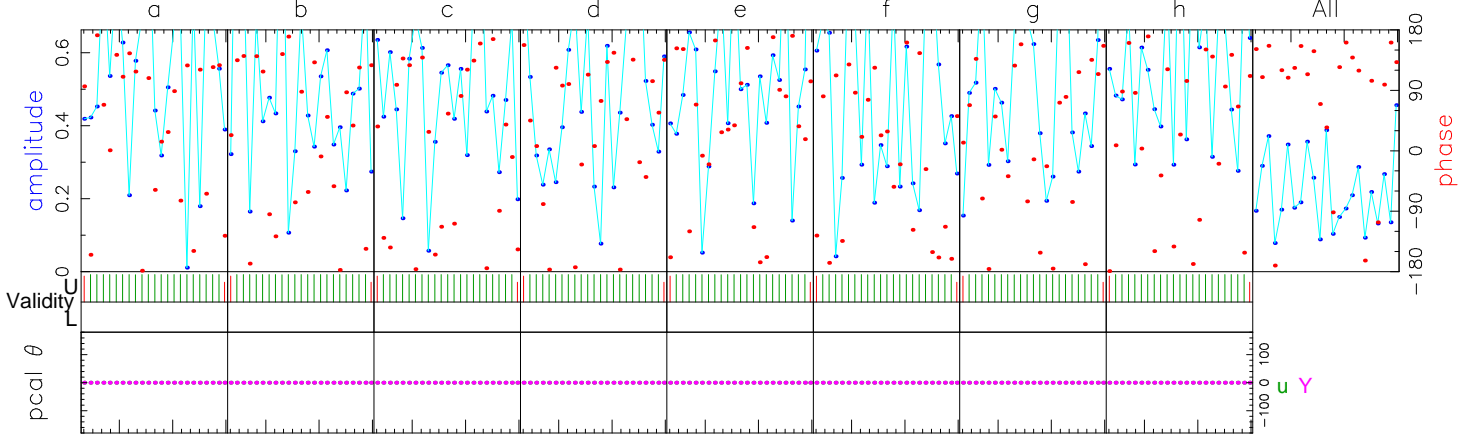


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090016.90  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134820  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	319/0	319/0	319/0	319/0	319/0	319/0	319/0	319/0		
u	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
u:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)		4.23832803132E+03			4.23807973662E+03				Resid mbdelay (usec)	-1.70530E-03 +/- 1.8E-04
Sband delay (usec)		4.23833177887E+03			-9.1556301E+00				Resid sbdelay (usec)	2.52042E-01 +/- 1.5E-03
Phase delay (usec)		4.23807974071E+03			2.7999998E-07				Resid phdelay (usec)	4.08189E-06 +/- 6.2E-07
Delay rate (us/s)		1.097544458192E+00			1.09755338936E+00				Resid rate (us/s)	-8.80744E-06 +/- 6.6E-09
Total phase (deg)			311.2		-2.91753254315E-05				Resid phase (deg)	126.6 +/- 19.3
	RMS	Theor.	Amplitude	0.221 +/- 0.037					PCal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
ph/seg (deg)	53.3	46.4	Search (1024X32)	0.164					PCal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
amp/seg (%)	66.7	81.0	Interp.	0.000					Bits/sample: 2x2	SampCntNorm: enabled mb window (us) -0.008 0.008
ph/frq (deg)	22.4	27.4	Inc. seg. avg.	0.215					Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
amp/frq (%)	24.3	47.8	Inc. frq. avg.	0.205					Data rate(Mb/s): 2048	nlags: 256 t_cohere infinite ion window (TEC) 0.00 0.00

u: az 36.2 el 28.1 pa -67.5 Y: az 337.1 el 16.1 pa 34.3 u,v (fr/asec) -12057.840 -4004.825 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uY..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uY.W.439.1HRBHI

Mk4/DiFX fourfit 3.21 rev 2937

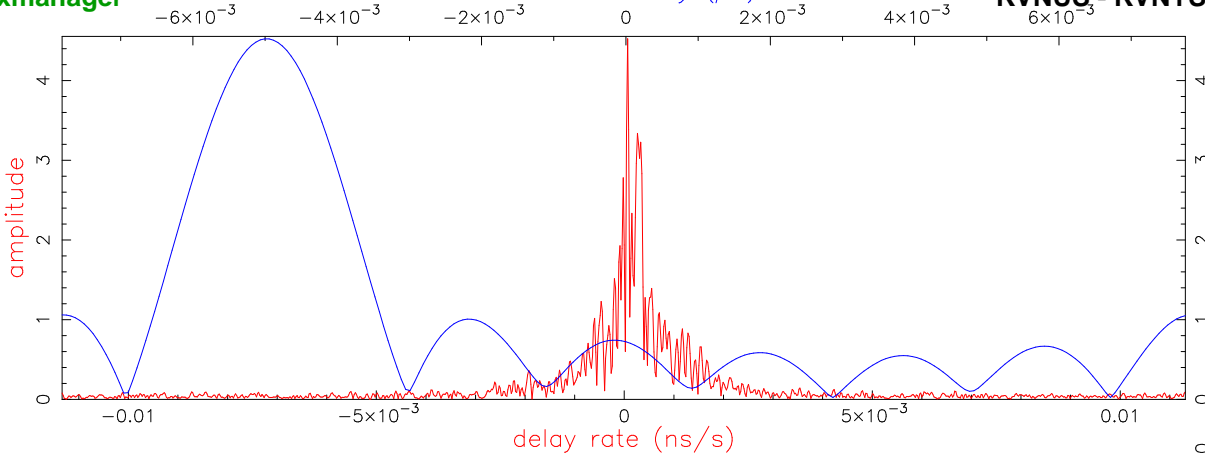
fxmanager

0102+584.1HRBHI, No0113, uy

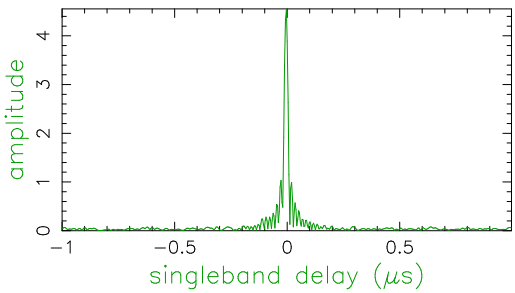
KVNU<sub>3</sub> - KVNY<sub>5</sub>, fgroup W, pol RR

multiband delay ( $\mu$ s)

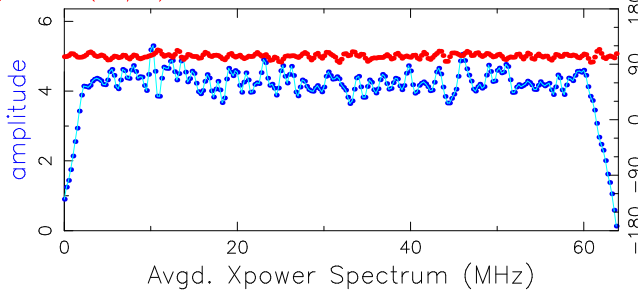
Fringe quality 5



SNR 167.1  
 Int time 179.952  
 Amp 4.555  
 Phase 104.1  
 PFD 0.0e+00  
 Delays (us)  
 SBD -0.004932  
 MBD -0.004979  
 Fringe rate (Hz)  
 0.005376  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

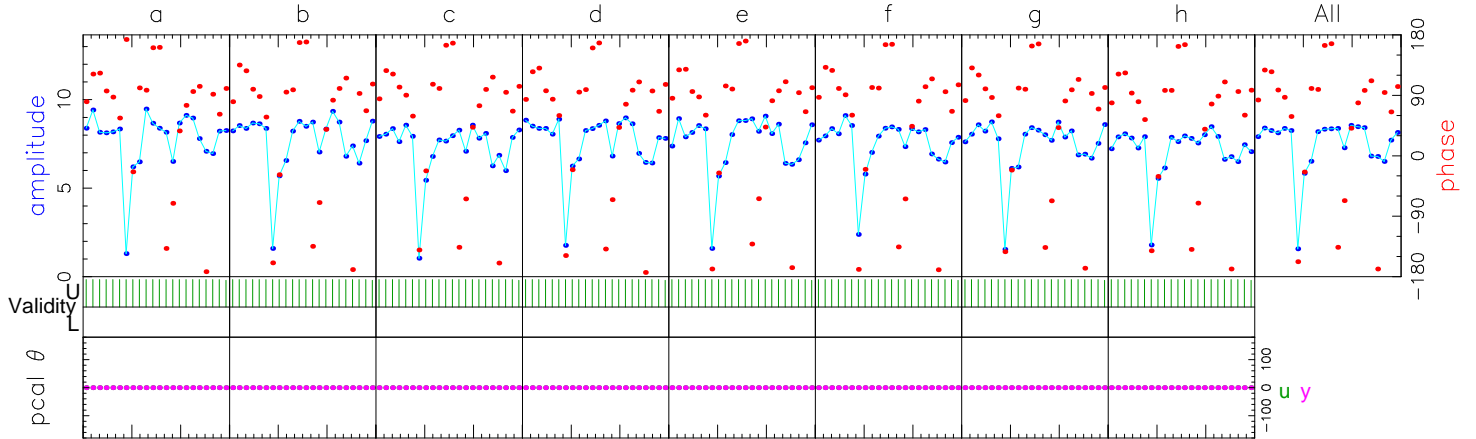


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134820  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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		
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
y	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Chan ids	
									Tracks	
Group delay (usec)(sbd)	-1.68250845393E+02								Resid mbdelay (usec)	-4.97888E-03 +/- 6.5E-06
Sband delay (usec)	-1.68250798260E+02								Resid sbdelay (usec)	-4.93175E-03 +/- 5.2E-05
Phase delay (usec)	-1.68245863153E+02								Resid phdelay (usec)	3.35720E-06 +/- 2.2E-08
Delay rate (us/s)	1.87925722479E-02								Resid rate (us/s)	6.24140E-08 +/- 2.1E-10
Total phase (deg)		-234.7							Resid phase (deg)	104.1 +/- 0.7
	RMS	Theor.	Amplitude	4.555 +/- 0.027					Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
ph/seg (deg)	65.8	1.6	Search (1024X32)	4.461					Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
amp/seg (%)	72.8	2.8	Interp.	0.000					Bits/sample: 2x2	SampCntNorm: enabled mb window (us) -0.008 0.008
ph/frq (deg)	2.6	1.0	Inc. seg. avg.	7.507					Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
amp/frq (%)	4.5	1.7	Inc. frq. avg.	4.528					Data rate(Mb/s): 2048	nlags: 256 t_cohere infinite ion window (TEC) 0.00 0.00

u: az 36.2 el 28.1 pa -67.5 y: az 36.3 el 28.6 pa -64.4 u,v (fr/asec) -207.393 -363.546 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uy..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uy.W.442.1HRBHI



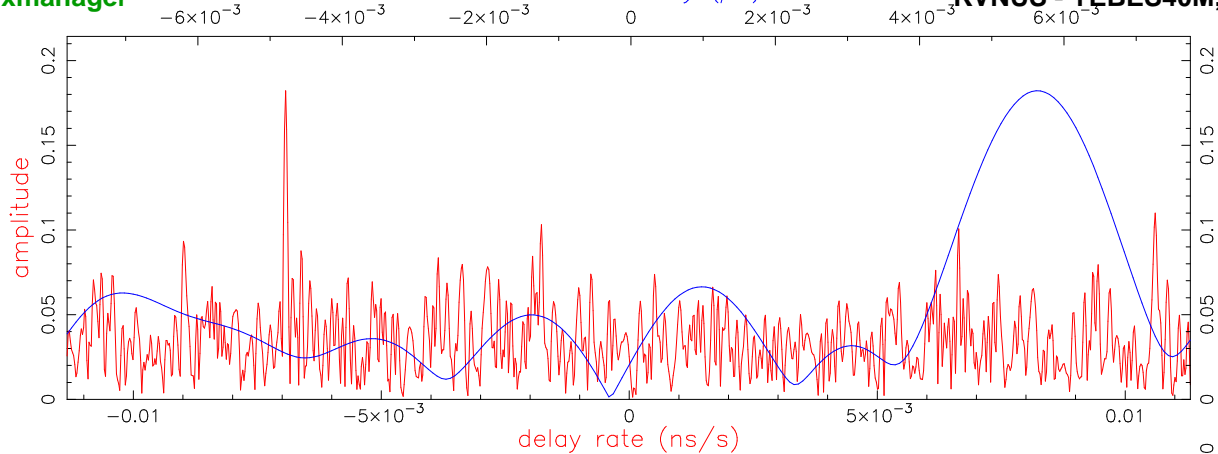
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, uY

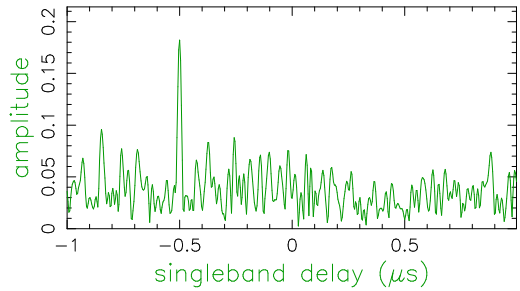
KVNUS - YEBES40M, fgroup W, pol LR

multiband delay ( $\mu$ s)

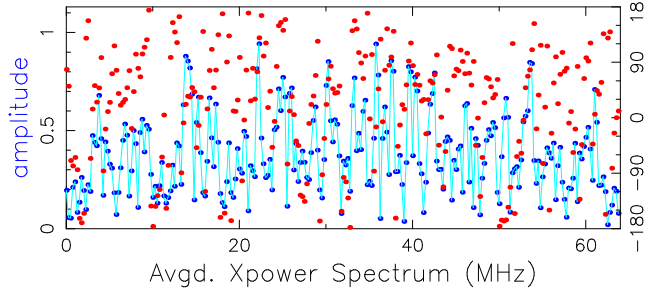


Fringe quality 0

SNR 6.4  
 Int time 162.097  
 Amp 0.214  
 Phase -9.4  
 PFD 2.7e-02  
 Delays (us)  
 SBD -0.500697  
 MBD 0.005628  
 Fringe rate (Hz)  
 -0.598468  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

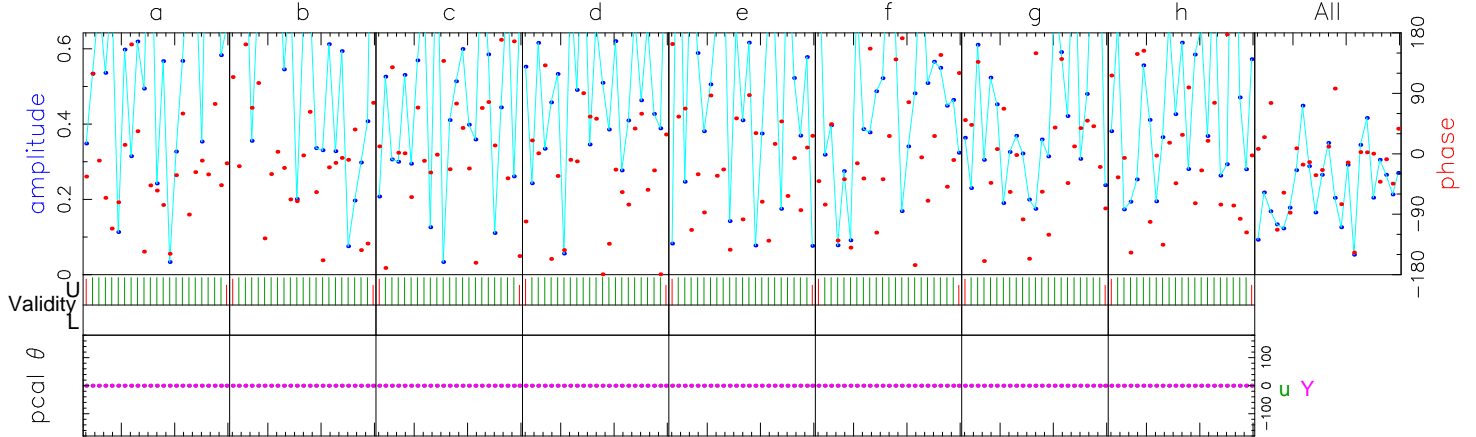


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090016.90  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134822  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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
	-30.8	3.2	23.9	2.3	-17.5	-17.0	11.7	-39.3		-9.4
	0.4	0.2	0.2	0.2	0.3	0.2	0.2	0.2		0.2
	128.3	190.0	231.7	155.1	6.3	161.4	131.5	326.8		128.8
U/L	319/0	319/0	319/0	319/0	319/0	319/0	319/0	319/0		
u	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
u:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u	1000	1000	1000	1000	1000	1000	1000	1000		
Y	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		

Group delay (usec)(sbd)	4.23758536460E+03	Apriori delay (usec)	4.23807973662E+03	Resid mbdelay (usec)	5.62798E-03	+/-	1.7E-04
Sband delay (usec)	4.23757903962E+03	Apriori clock (usec)	-9.1556301E+00	Resid sbdelay (usec)	-5.00697E-01	+/-	1.4E-03
Phase delay (usec)	4.23807973632E+03	Apriori clockrate (us/s)	2.7999998E-07	Resid phdelay (usec)	-3.02918E-07	+/-	5.8E-07
Delay rate (us/s)	1.09754644174E+00	Apriori rate (us/s)	1.09755338936E+00	Resid rate (us/s)	-6.94762E-06	+/-	6.2E-09
Total phase (deg)	175.2	Apriori accel (us/s/s)	-2.91753254315E-05	Resid phase (deg)	-9.4	+/-	18.0

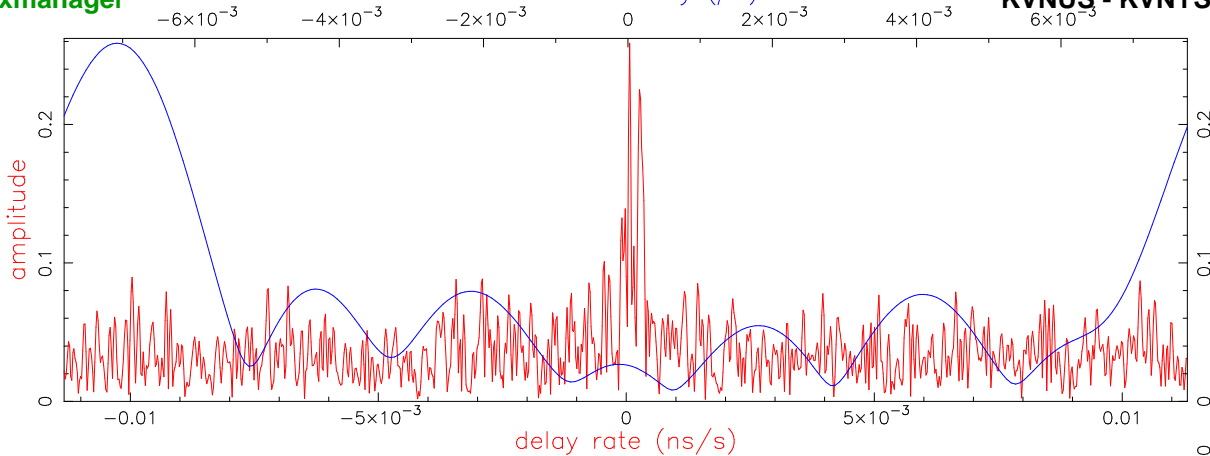
ph/seg (deg)	54.8	RMS	54.8	Theor.	43.2	Amplitude	0.214 +/- 0.034	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5		
amp/seg (%)	61.3		61.3		75.4	Search (1024X32)	0.177	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000		
ph/frq (deg)	23.5		23.5		25.5	Interp.	0.000	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008	
amp/frq (%)	26.4		26.4		44.5	Inc. seg. avg.	0.215	Sample rate (MSamp/s):	128	dr window (ns/s)	-0.011 0.011		
						Inc. frq. avg.	0.207	Data rate (Mb/s):	2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00 0.00

u: az 36.2 el 28.1 pa -67.5 Y: az 337.1 el 16.1 pa 34.3 u,v (fr/asec) -12057.840 -4004.825 simultaneous interpolator

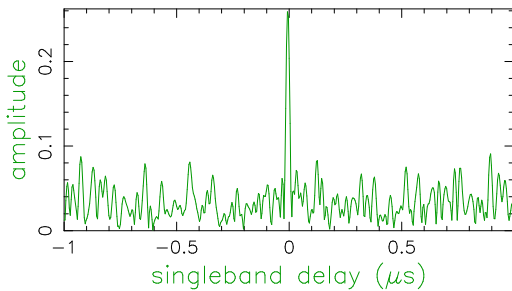
Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uY..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uY.W.459.1HRBHI

multiband delay ( $\mu$ s)

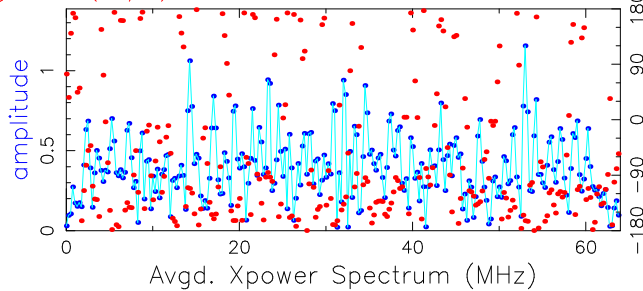
Fringe quality 9



SNR 9.6  
Int time 179.952  
Amp 0.262  
Phase -130.2  
PFD 1.3e-13  
Delays (us)  
SBD -0.006326  
MBD -0.007069  
Fringe rate (Hz) 0.005235  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512

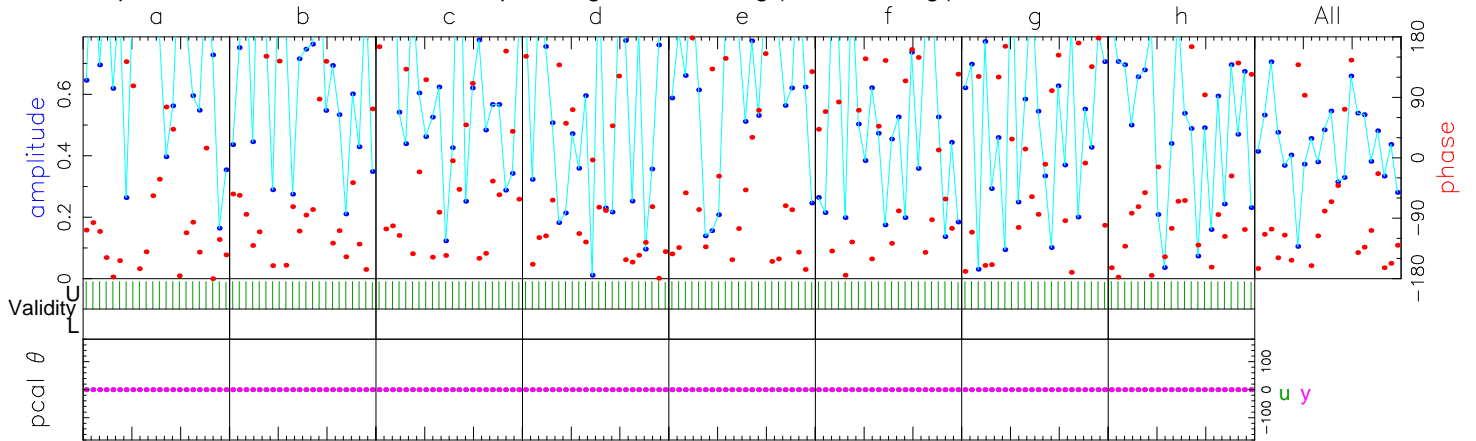


delay rate (ns/s)



Exp. c202a  
Exper # 16383  
Yr:day 2020:283  
Start 090000.00  
Stop 090300.22  
FRT 090130.00  
Corr/FF/build  
2021:006:172908  
2021:010:134823  
2020:247:085004  
RA & Dec (J2000)  
01h02m45.762375s  
+58°24'11.136621"

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		
u	1000	1000	1000	1000	1000	1000	1000	1000		
y	1000	1000	1000	1000	1000	1000	1000	1000		
u:y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u:y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u	1000	1000	1000	1000	1000	1000	1000	1000		
y	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
y	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
Group delay (usec)(sbd)	-1.68252935549E+02									
Sband delay (usec)	-1.68252192260E+02									
Phase delay (usec)	-1.68245870710E+02									
Delay rate (us/s)	1.87925706098E-02									
Total phase (deg)			-109.1							
Apriori delay (usec)					-1.68245866510E+02					
Apriori clock (usec)					1.2822275E+00					
Apriori clockrate (us/s)					2.9999999E-07					
Apriori rate (us/s)					1.87925098339E-02					
Apriori accel (us/s/s)					-1.82110108059E-06					
Resid mbdelay (usec)									-7.06904E-03	+/- 1.1E-04
Resid sbdelay (usec)									-6.32575E-03	+/- 9.0E-04
Resid phdelay (usec)									-4.19932E-06	+/- 3.8E-07
Resid rate (us/s)									6.07758E-08	+/- 3.7E-09
Resid phase (deg)									-130.2	+/- 11.9
Pcal mode:	MANUAL, MANUAL		PC period (AP's) 5, 5							
Pcal rate:	0.000E+00, 0.000E+00 (us/s)		sb window (us)		-1.000		1.000			
Bits/sample:	2x2		SampCntNorm: enabled		mb window (us)		-0.008		0.008	
Sample rate (MSamp/s):	128		dr window (ns/s)		-0.011		0.011			
Data rate (Mb/s):	2048		nlags: 256		t_cohere infinite		ion window (TEC)		0.00	
u: az 36.2 el 28.1 pa -67.5	y: az 36.3 el 28.6 pa -64.4		u, v (fr/asec) -207.393 -363.546						simultaneous interpolator	

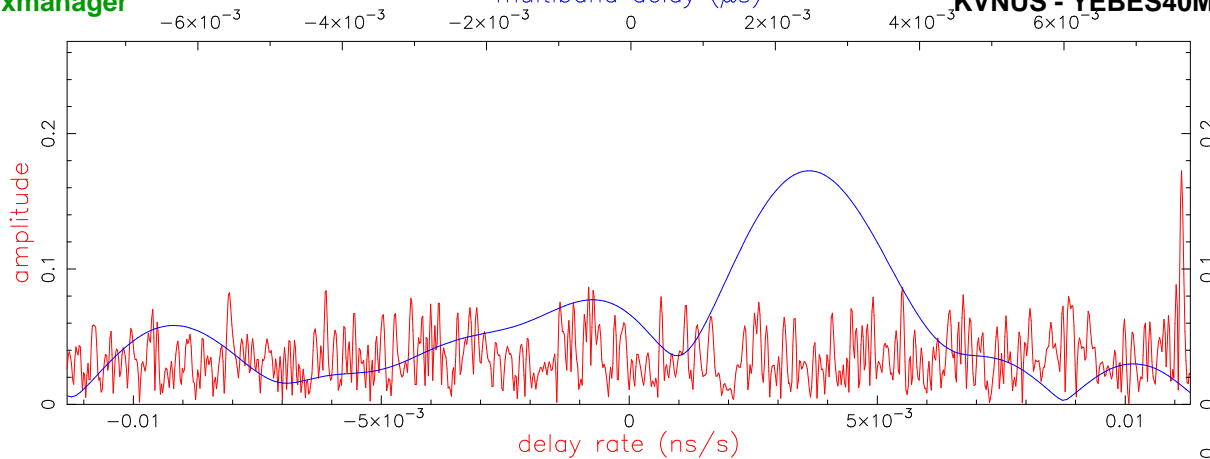
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, uY

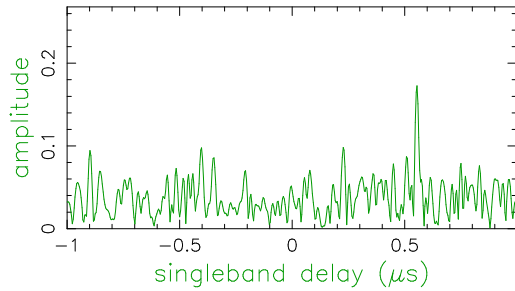
KVNUS - YEBES40M, fgroup W, pol RL

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

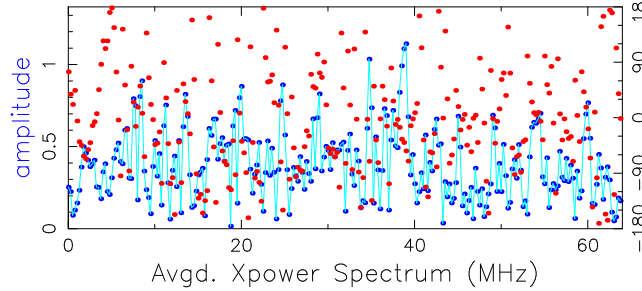


Fringe quality 0

SNR 6.0  
 Int time 162.097  
 Amp 0.268  
 Phase -145.0  
 PFD 1.8e-01  
 Delays (us)  
 SBD 0.553690  
 MBD 0.002446  
 Fringe rate (Hz)  
 0.960206  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

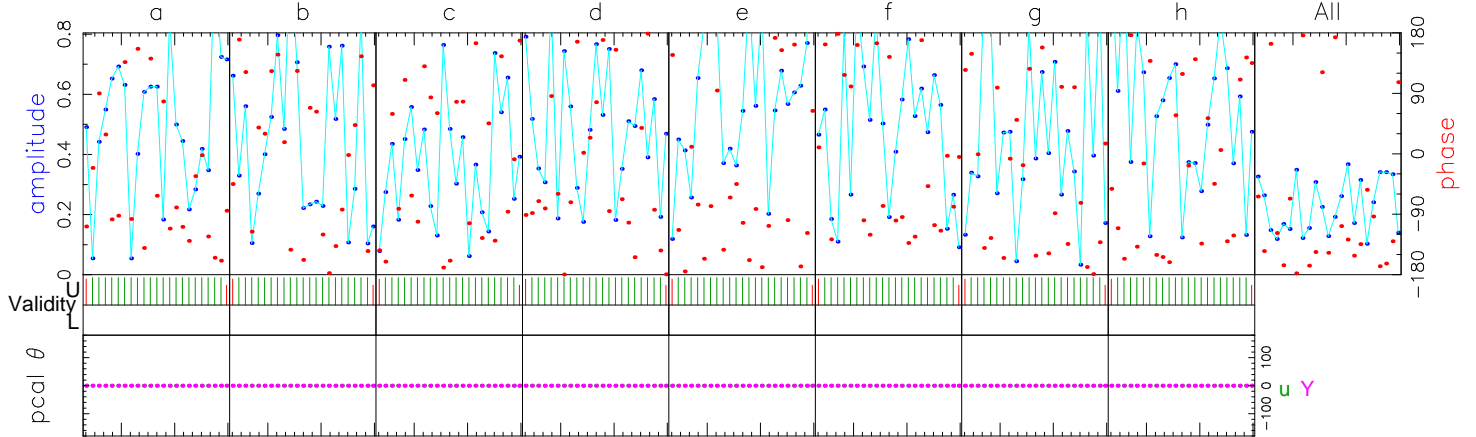


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090016.90  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134824  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
	-121.9	160.6	-176.9	-112.4	-142.1	-139.9	-158.6	-129.3	Phase	-145.0
	0.4	0.2	0.2	0.2	0.4	0.4	0.4	0.2	Ampl.	0.3
	96.7	188.5	204.3	366.2	398.3	111.4	460.9	460.1	Sbd box	398.7
U/L	319/0	319/0	319/0	319/0	319/0	319/0	319/0	319/0	APs used	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Y	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:Y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Manl PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Y	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd)	4.23862905729E+03	Apriori delay (usec)	4.23807973662E+03	Resid mbdelay (usec)	2.44567E-03	+/-	1.8E-04
Sband delay (usec)	4.23863342712E+03	Apriori clock (usec)	-9.1556301E+00	Resid sbdelay (usec)	5.53690E-01	+/-	1.4E-03
Phase delay (usec)	4.23807973195E+03	Apriori clockrate (us/s)	2.7999998E-07	Resid phdelay (usec)	-4.67606E-06	+/-	6.1E-07
Delay rate (us/s)	1.09756453641E+00	Apriori rate (us/s)	1.09755338936E+00	Resid rate (us/s)	1.11470E-05	+/-	6.5E-09
Total phase (deg)		Apriori accel (us/s/s)	-2.91753254315E-05	Resid phase (deg)	-145.0	+/-	19.0

ph/seg (deg)	48.0	Theor.	45.5	Amplitude	0.268 +/- 0.044	Pcal mode: MANUAL, MANUAL	PC period (AP's) 5, 5		
amp/seg (%)	60.4	Search (1024X32)	0.168	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		sb window (us)	-1.000 1.000		
ph/frq (deg)	31.7	Interp.	0.000	Bits/sample: 2x2		SampCntNorm: enabled	mb window (us)	-0.008 0.008	
amp/frq (%)	36.2	Inc. seg. avg.	0.271	Sample rate(MISamp/s): 128		dr window (ns/s)	-0.011 0.011		
		Inc. frq. avg.	0.263	Data rate(Mb/s): 2048		nlags: 256	t_cohere infinite	ion window (TEC)	0.00 0.00

u: az 36.2 el 28.1 pa -67.5 Y: az 337.1 el 16.1 pa 34.3 u,v (fr/asec) -12057.840 -4004.825 simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uY..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uY.W.473.1HRBHI

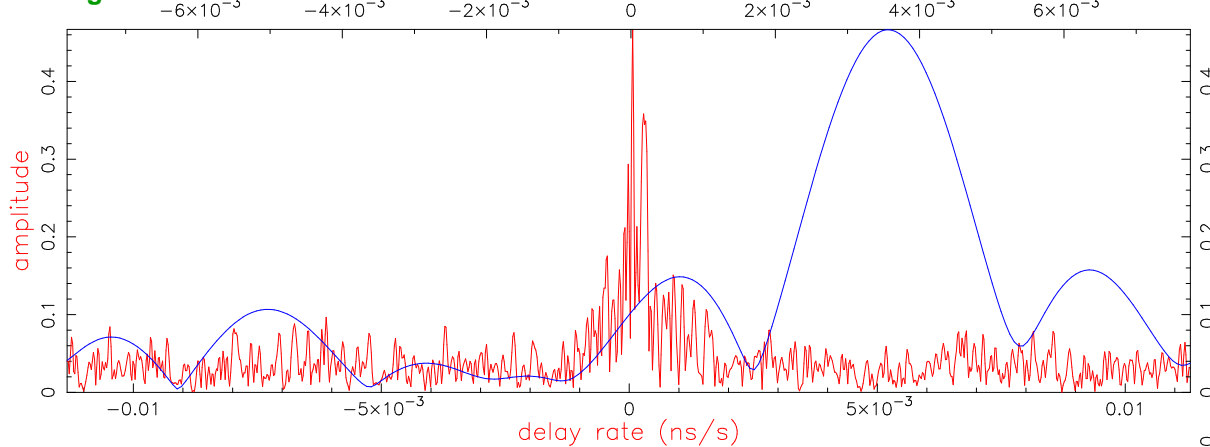
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, uy

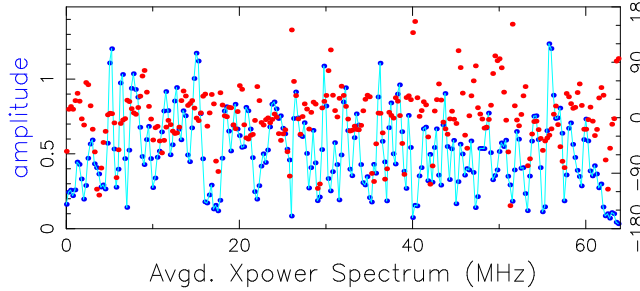
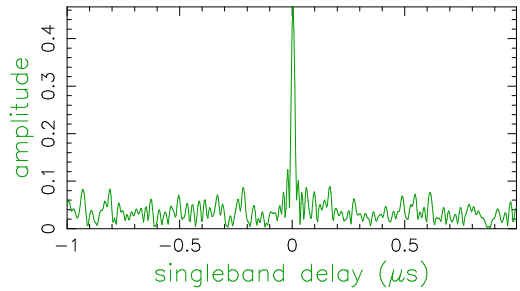
KVNU<sub>3</sub> - KVNY<sub>5</sub>, fgroup W, pol RL

multiband delay ( $\mu$ s)



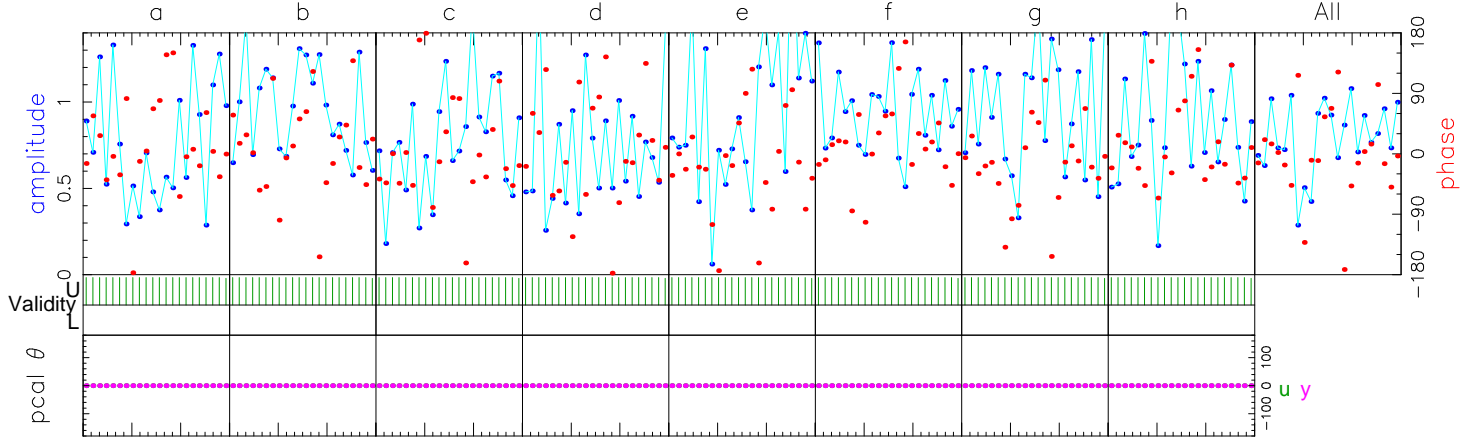
Fringe quality 9

SNR 17.1  
 Int time 179.952  
 Amp 0.467  
 Phase 2.1  
 PFD 0.0e+00  
 Delays (us)  
 SBD 0.003542  
 MBD 0.003561  
 Fringe rate (Hz)  
 0.005396  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134825  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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		257.9
u	1000	1000	1000	1000	1000	1000	1000	1000		
y	1000	1000	1000	1000	1000	1000	1000	1000		
u:y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u:y	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0		
u	1000	1000	1000	1000	1000	1000	1000	1000		
y	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR		
y	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL		
Group delay (usec)(sbd)	-1.68242305049E+02				-1.68245866510E+02				3.56146E-03	+/- 6.3E-05
Sband delay (usec)	-1.68242324510E+02				1.2822275E+00				3.54200E-03	+/- 5.0E-04
Phase delay (usec)	-1.68245866441E+02				2.9999999E-07				6.92741E-08	+/- 2.2E-07
Delay rate (us/s)	1.87925724747E-02				1.87925098339E-02				6.26407E-08	+/- 2.1E-09
Total phase (deg)			-336.7		-1.82110108059E-06				2.1	+/- 6.7
	RMS	Theor.	Amplitude	0.467 +/- 0.027						
ph/seg (deg)	68.4	15.7	Search (1024X32)	0.458						
amp/seg (%)	82.6	27.4	Interp.	0.000						
ph/frq (deg)	9.8	9.5	Inc. seg. avg.	0.765						
amp/frq (%)	22.7	16.5	Inc. frq. avg.	0.466						
u: az 36.2 el 28.1 pa -67.5			y: az 36.3 el 28.6 pa -64.4							
					u,v (fr/asec) -207.393 -363.546					simultaneous interpolator

Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uy..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uy.W.488.1HRBHI

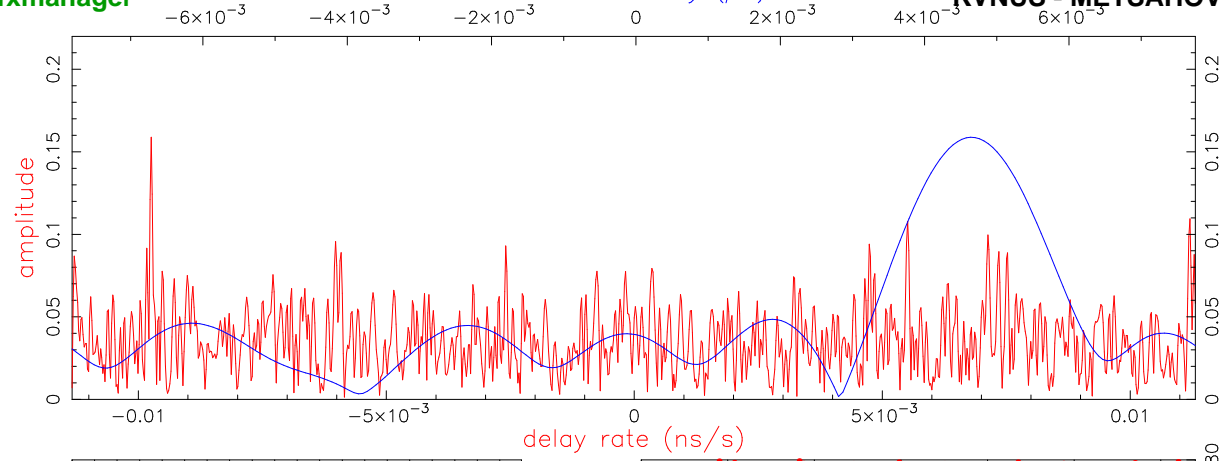
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

0102+584.1HRBHI, No0113, uZ

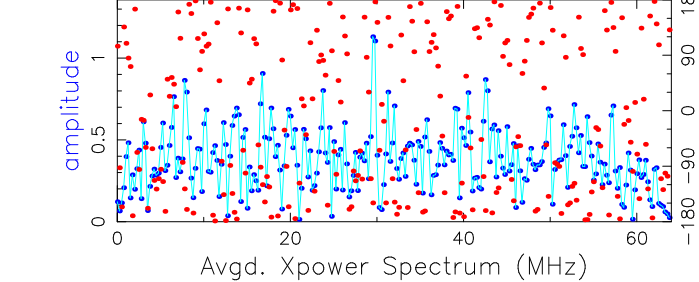
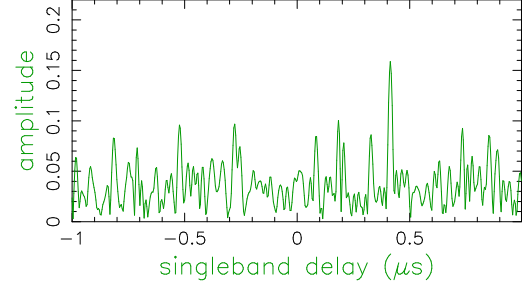
KVNUS - METSAHOV, fgroup W, pol LL

multiband delay ( $\mu s$ )



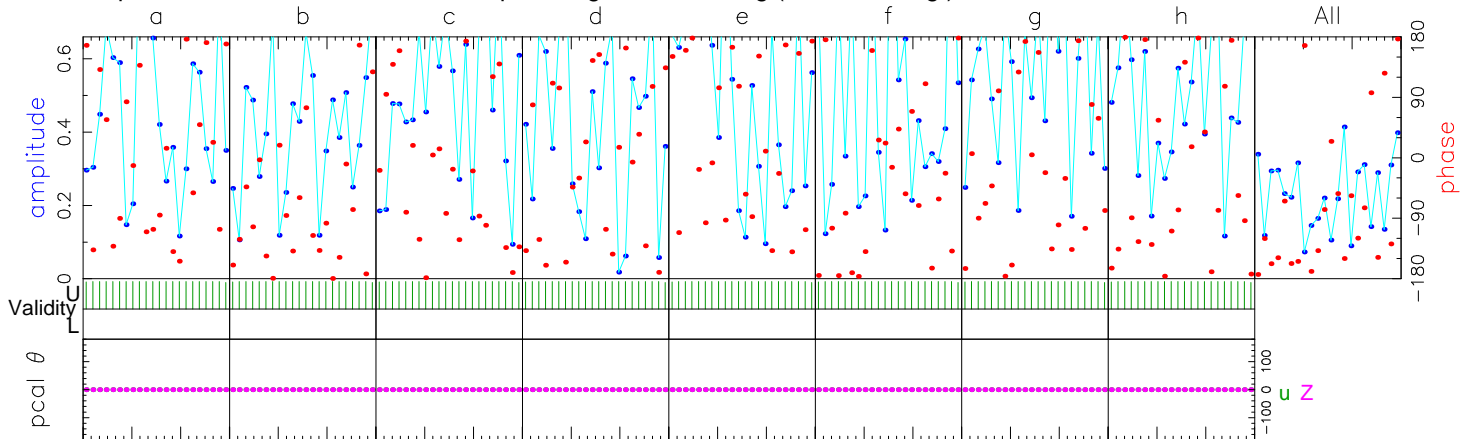
Fringe quality 0

SNR 5.8  
Int time 179.688  
Amp 0.220  
Phase -139.5  
PFD 5.2e-01  
Delays (us)  
SBD 0.413954  
MBD 0.004645  
Fringe rate (Hz) -0.840229  
Ion TEC 0.000  
Ref freq (MHz) 86140.0000  
AP (sec) 0.512



Exp. c202a  
Yr:day # 16383  
Start 2020:283  
Stop 2020:283  
FRT 090130.00  
Corr/FF/build  
2021:006:172908  
2021:010:134818  
2020:247:085004  
RA & Dec (J2000)  
01h02m45.762375s  
+58°24'11.136621"

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
	-134.1	-137.6	-119.2	-177.0	-145.0	-138.6	-116.8	-143.1	Phase	-139.5
	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.3	Ampl.	0.2
	297.2	365.0	211.0	190.9	73.1	143.9	277.9	361.1	Sbd box	363.0
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Z	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:Z	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:Z	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Z	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Z	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	

Group delay (usec)(sbd)	-3.86400400148E+02	Apriori delay (usec)	-3.86811294971E+02	Resid mbdelay (usec)	6.64482E-03	+/-	1.9E-04
Sband delay (usec)	-3.86397341221E+02	Apriori clock (usec)	2.3748217E+00	Resid sbdelay (usec)	4.13954E-01	+/-	1.5E-03
Phase delay (usec)	-3.86811299469E+02	Apriori clockrate (us/s)	3.8399996E-07	Resid phdelay (usec)	-4.49801E-06	+/-	6.3E-07
Delay rate (us/s)	7.82552099663E-01	Apriori rate (us/s)	7.82561853887E-01	Resid rate (us/s)	-9.75422E-06	+/-	6.1E-09
Total phase (deg)	-121.1	Apriori accel (us/s/s)	-2.55393056095E-05	Resid phase (deg)	-139.5	+/-	19.7

ph/seg (deg)	63.3	Theor.	46.2	Amplitude	0.220 +/- 0.038	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5		
amp/seg (%)	77.2		80.6	Search (1024X32)	0.148	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000		
ph/frq (deg)	20.0		27.8	Inc. seg. avg.	0.243	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008	
amp/frq (%)	23.5		48.6	Inc. frq. avg.	0.205	Sample rate (MSamp/s):	128	dr window (ns/s)	-0.011 0.011		
u: az 36.2 el 28.1 pa -67.5		Z: az 349.2 el 29.6 pa 10.5		u, v (fr/asec)	-8599.921 -4564.725	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/c202a/v1/v1\_3mm/1234/No0113/uZ..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uZ.W.422.1HRBHI

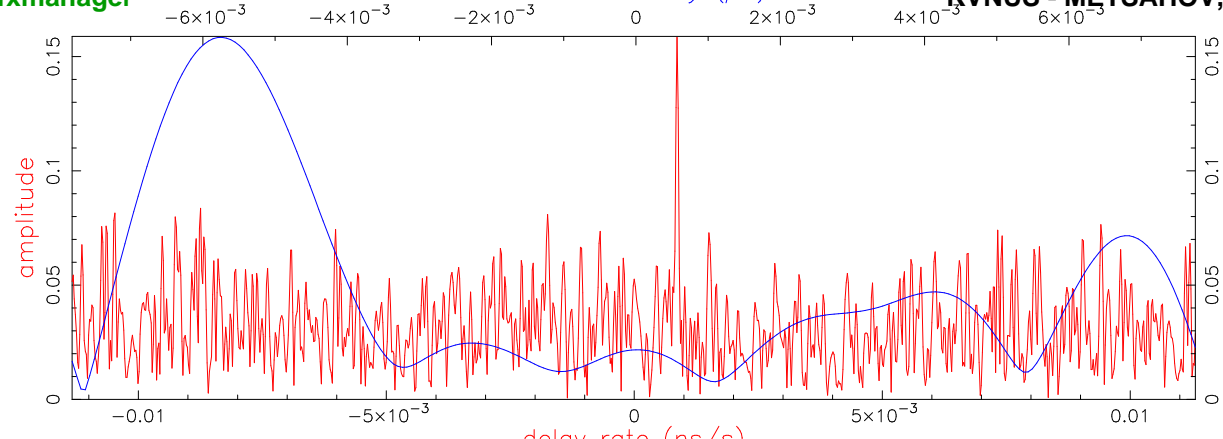
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

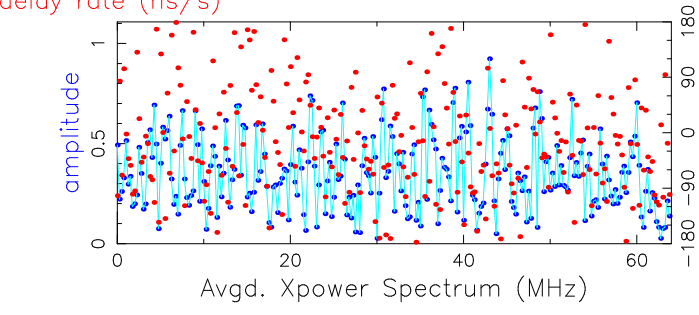
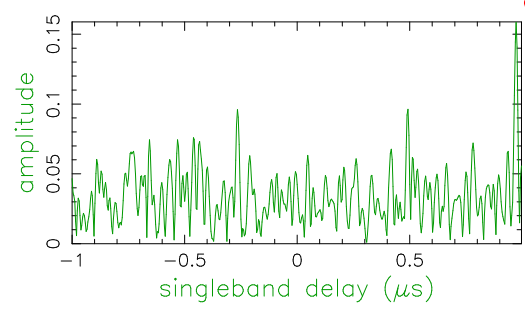
0102+584.1HRBHI, No0113, uZ

KVNUS - METSAHOV, fgroup W, pol RR

multiband delay ( $\mu$ s)

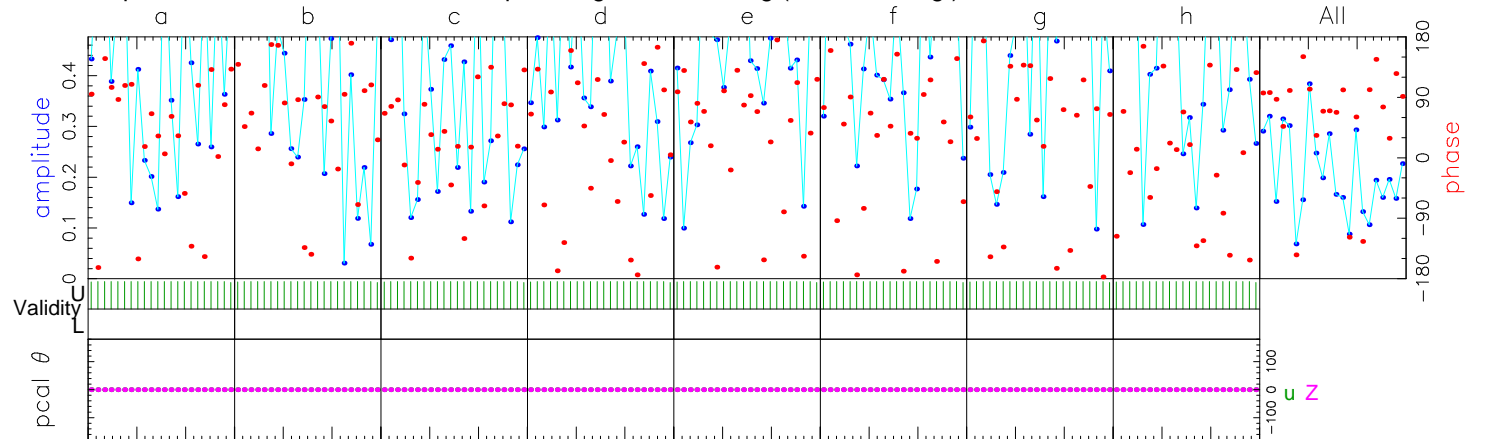


Fringe quality 0  
 SNR 5.8  
 Int time 179.688  
 Amp 0.159  
 Phase 86.8  
 PFD 5.5e-01  
 Delays ( $\mu$ s)  
 SBD 0.972475  
 MBD -0.005750  
 Fringe rate (Hz) 0.074299  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134821  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"



Avgd. Xpower Spectrum (MHz)

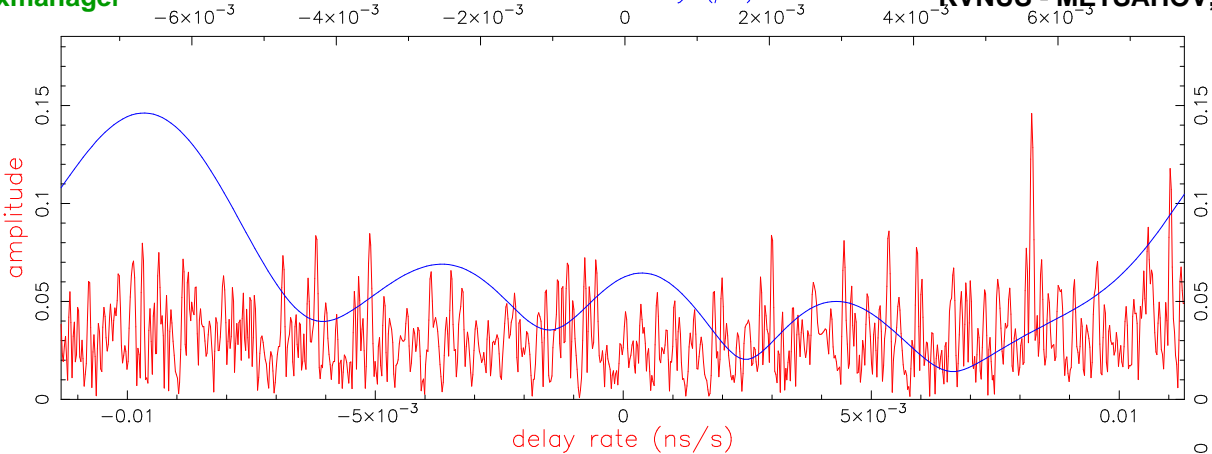
Amp. and Phase vs. time for each freq., 22 segs, 16 APs / seg (8.19 sec / seg.), time ticks 10 sec



	86012.00	86076.00	86140.00	86204.00	86268.00	86332.00	86396.00	86460.00	Freq (MHz)	All
U/L	107.0	84.6	58.3	97.2	85.4	103.2	108.9	23.8	Phase	86.8
u	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.1	Ampl.	0.2
Z	352.8	266.5	477.9	392.8	504.4	187.9	29.6	406.2	Sbd box	506.0
u:Z	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
u:Z	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:Z	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:Z	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Z	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Z	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	
									Tracks	
Group delay (usec)(sbd)	-3.85832670253E+02		Apriori delay (usec)		-3.86811294971E+02		Resid mbdelay (usec)		-5.75028E-03	+/- 1.9E-04
Sband delay (usec)	-3.85838819971E+02		Apriori clock (usec)		2.3748217E+00		Resid sbdelay (usec)		9.72475E-01	+/- 1.5E-03
Phase delay (usec)	-3.86811292172E+02		Apriori clockrate (us/s)		3.8399996E-07		Resid phdelay (usec)		2.79920E-06	+/- 6.4E-07
Delay rate (us/s)	7.82562716430E-01		Apriori rate (us/s)		7.82561853887E-01		Resid rate (us/s)		8.62543E-07	+/- 6.1E-09
Total phase (deg)			Apriori accel (us/s/s)		-2.55393056095E-05		Resid phase (deg)		86.8	+/- 19.7

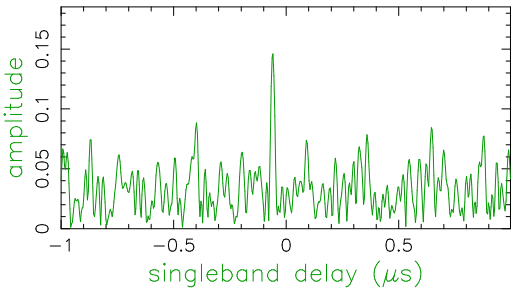
ph/seg (deg) 61.3 46.3 Amplitude 0.159 +/- 0.027 Pcal mode: MANUAL, MANUAL PC period (AP's) 5, 5  
 amp/seg (%) 61.3 80.7 Search (1024X32) 0.157 Pcal rate: 0.000E+00, 0.000E+00 (us/s) sb window (us) -1.000 1.000  
 ph/frq (deg) 31.8 27.9 Inc. seg. avg. 0.158 Bits/sample: 2x2 SampCntNorm: enabled mb window (us) -0.008 0.008  
 amp/frq (%) 33.2 48.7 Inc. frq. avg. 0.154 Sample rate(MISamp/s): 128 Data rate(Mb/s): 2048 nlags: 256 t\_cohere infinite dr window (ns/s) -0.011 0.011  
 u: az 36.2 el 28.1 pa -67.5 Z: az 349.2 el 29.6 pa 10.5 u,v (fr/asec) -8599.921 -4564.725 simultaneous interpolator  
 Control file: cf\_1234\_gmva Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uZ..1HRBHI Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uZ.W.445.1HRBHI

multiband delay ( $\mu$ s)

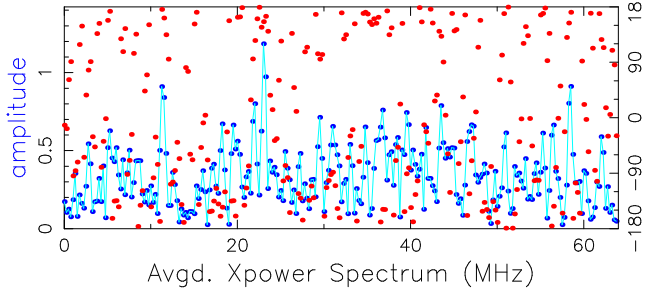


Fringe quality 0

SNR 5.4  
 Int time 179.688  
 Amp 0.185  
 Phase -61.3  
 PFD 1.0e+00  
 Delays (us)  
 SBD -0.060013  
 MBD -0.006583  
 Fringe rate (Hz)  
 0.711468  
 Ion TEC 0.000  
 Ref freq (MHz)  
 86140.0000  
 AP (sec) 0.512

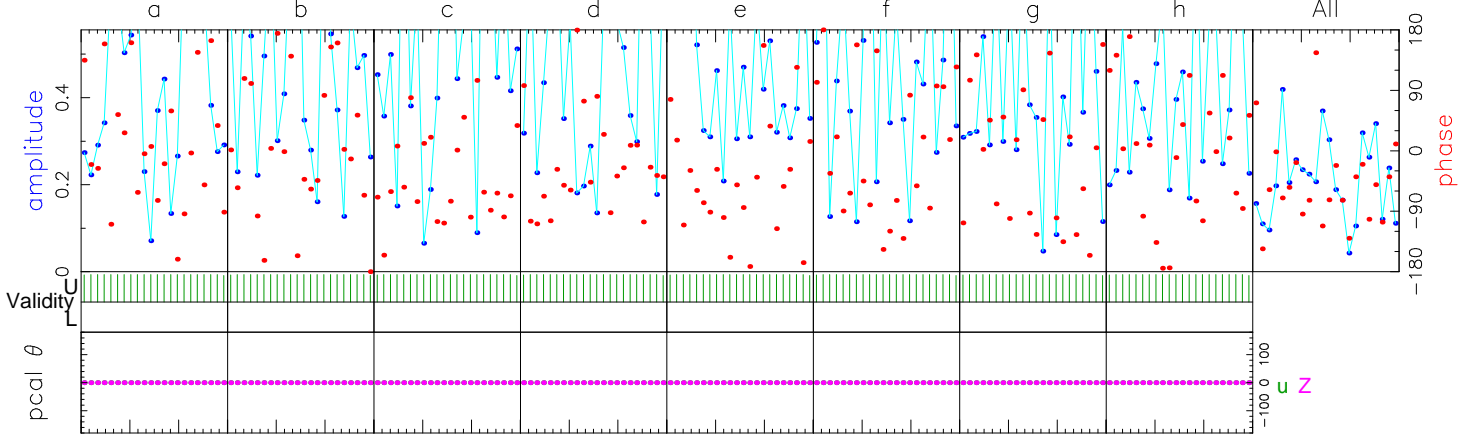


delay rate (ns/s)



Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134823  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"

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
	-48.6	92.7	-68.1	-53.1	-59.0	-78.8	-116.7	-31.5	Phase	-61.3
	0.1	0.1	0.5	0.4	0.2	0.2	0.1	0.1	Ampl.	0.2
	296.0	396.7	241.6	241.8	145.0	182.6	155.6	31.0	Sbd box	241.6
U/L	352/0	352/0	352/0	352/0	352/0	352/0	352/0	352/0	APs used	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Z	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:Z	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:Z	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Z	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Chan ids	
Z	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Tracks	

Group delay (usec)(sbd)	-3.86864753108E+02	Apriori delay (usec)	-3.86811294971E+02	Resid mbdelay (usec)	-6.58314E-03	+/-	2.0E-04
Sband delay (usec)	-3.86871307471E+02	Apriori clock (usec)	2.3748217E+00	Resid sbdelay (usec)	-6.00125E-02	+/-	1.6E-03
Phase delay (usec)	-3.86811296948E+02	Apriori clockrate (us/s)	3.8399996E-07	Resid phdelay (usec)	-1.97676E-06	+/-	6.8E-07
Delay rate (us/s)	7.82570113331E-01	Apriori rate (us/s)	7.82561853887E-01	Resid rate (us/s)	8.25944E-06	+/-	6.6E-09
Total phase (deg)	-42.9	Apriori accel (us/s/s)	-2.55393056095E-05	Resid phase (deg)	-61.3	+/-	21.2

ph/seg (deg)	58.5	Theor.	49.7	Amplitude	0.185 +/- 0.034	Pcal mode:	MANUAL, MANUAL	PC period (AP's)	5, 5		
amp/seg (%)	78.2		86.8	Search (1024X32)	0.145	Pcal rate:	0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000 1.000		
ph/frq (deg)	68.6		30.0	Interp.	0.000	Bits/sample:	2x2	SampCntNorm: enabled	mb window (us)	-0.008 0.008	
amp/frq (%)	73.9		52.3	Inc. seg. avg.	0.194	Sample rate (MSamp/s):	128	dr window (ns/s)	-0.011 0.011		
				Inc. frq. avg.	0.185	Data rate (Mb/s):	2048	nlags: 256	t_cohere infinite	ion window (TEC)	0.00 0.00

u: az 36.2 el 28.1 pa -67.5      Z: az 349.2 el 29.6 pa 10.5      u,v (fr/asec) -8599.921 -4564.725      simultaneous interpolator

Control file: cf\_1234\_gmva      Input file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uZ..1HRBHI      Output file: /Exps/c202a/v1/v1\_3mm/1234/No0113/uZ.W.467.1HRBHI

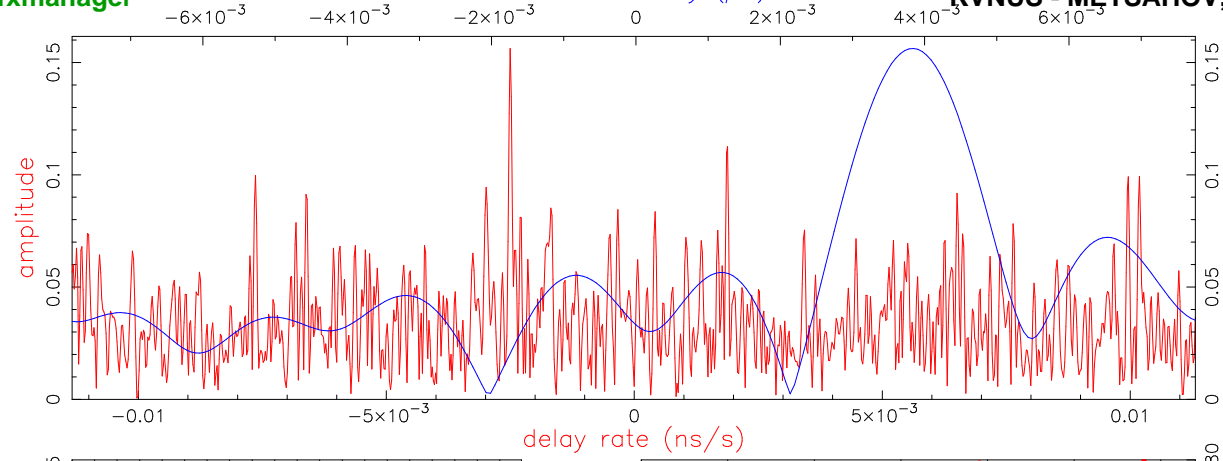
Mk4/DiFX fourfit 3.21 rev 2937

fxmanager

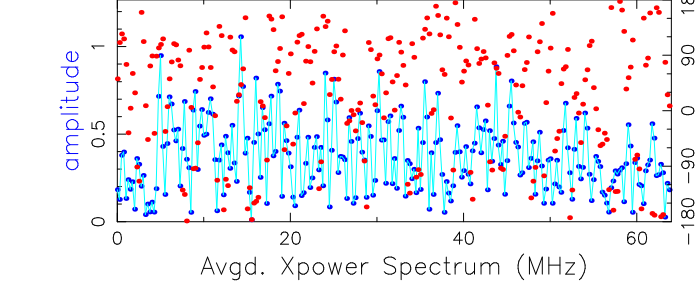
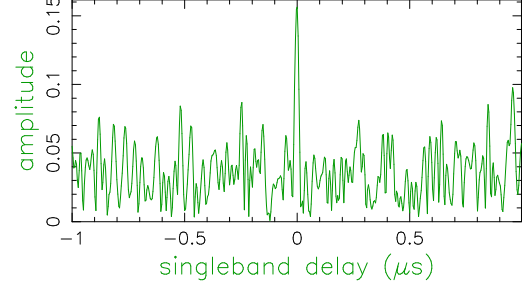
0102+584.1HRBHI, No0113, uZ

KVNUS - METSAHOV, fgroup W, pol RL

multiband delay ( $\mu$ s)

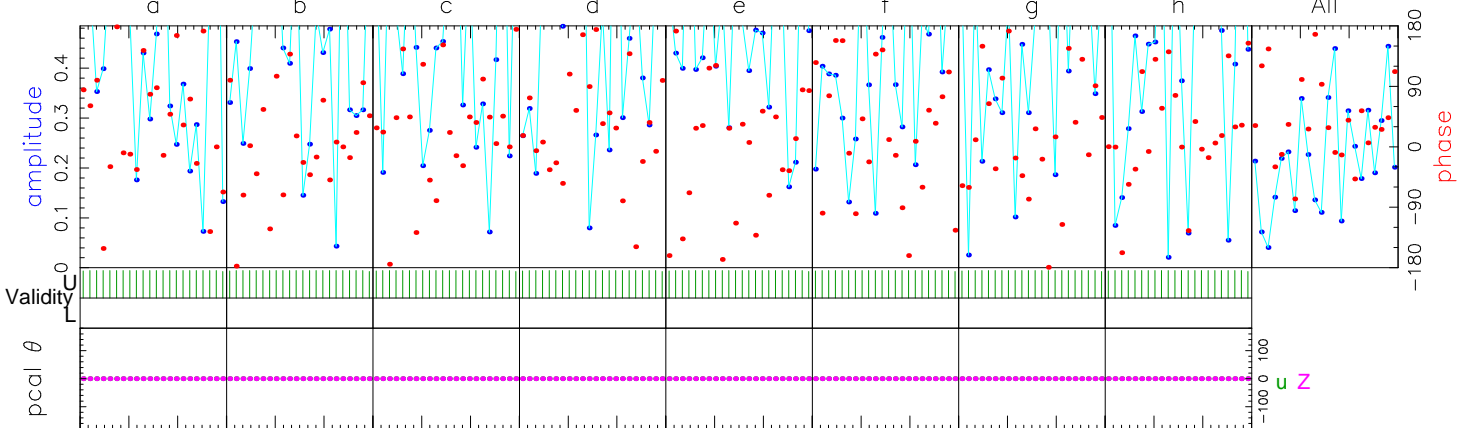


Fringe quality 0  
 SNR 5.8  
 Int time 179.688  
 Amp 0.162  
 Phase 28.8  
 PFD 5.5e-01  
 Delays (us)  
 SBD -0.001669  
 MBD 0.003832  
 Fringe rate (Hz) -0.216415  
 Ion TEC 0.000  
 Ref freq (MHz) 86140.0000  
 AP (sec) 0.512  
 Exp. c202a  
 Exper # 16383  
 Yr:day 2020:283  
 Start 090000.00  
 Stop 090300.22  
 FRT 090130.00  
 Corr/FF/build  
 2021:006:172908  
 2021:010:134825  
 2020:247:085004  
 RA & Dec (J2000)  
 01h02m45.762375s  
 +58°24'11.136621"



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		
u	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
Z	1000	1000	1000	1000	1000	1000	1000	1000	PC freqs	
u:Z	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	PC phase	
u:Z	0:0	0:0	0:0	0:0	0:0	0:0	0:0	0:0	Mani PC	
u	1000	1000	1000	1000	1000	1000	1000	1000	PC amp	
Z	1000	1000	1000	1000	1000	1000	1000	1000		
u	W00UR	W01UR	W02UR	W03UR	W04UR	W05UR	W06UR	W07UR	Chan ids	
Z	W00UL	W01UL	W02UL	W03UL	W04UL	W05UL	W06UL	W07UL	Tracks	
Group delay (usec)(sbd)	-3.86807463363E+02								Resid mbdelay (usec)	3.83161E-03 +/- 1.9E-04
Sband delay (usec)	-3.86812963471E+02								Resid sbdelay (usec)	-1.66850E-03 +/- 1.5E-03
Phase delay (usec)	-3.86811294043E+02								Resid phdelay (usec)	9.28258E-07 +/- 6.4E-07
Delay rate (us/s)	7.82559341519E-01								Resid rate (us/s)	-2.51237E-06 +/- 6.1E-09
Total phase (deg)			-312.8						Resid phase (deg)	28.8 +/- 19.7
	RMS	Theor.	Amplitude	0.162 +/- 0.028					PCal mode: MANUAL, MANUAL	PC period (AP's) 5, 5
ph/seg (deg)	61.8	46.3	Search (1024X32)	0.149					PCal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us) -1.000 1.000
amp/seg (%)	80.0	80.8	Interp.	0.000					Bits/sample: 2x2	mb window (us) -0.008 0.008
ph/frq (deg)	13.3	27.9	Inc. seg. avg.	0.172					Sample rate(MISamp/s): 128	dr window (ns/s) -0.011 0.011
amp/frq (%)	47.8	48.7	Inc. frq. avg.	0.145					Data rate(Mb/s): 2048	ion window (TEC) 0.00 0.00
u: az 36.2 el 28.1 pa -67.5			Z: az 349.2 el 29.6 pa 10.5						Data rate(Mb/s): 2048	nlags: 256 t_cohere infinite
Control file: cf_1234_gmva			Input file: /Exps/c202a/v1/v1_3mm/1234/No0113/uZ..1HRBHI						Output file: /Exps/c202a/v1/v1_3mm/1234/No0113/uZ.W.486.1HRBHI	simultaneous interpolator