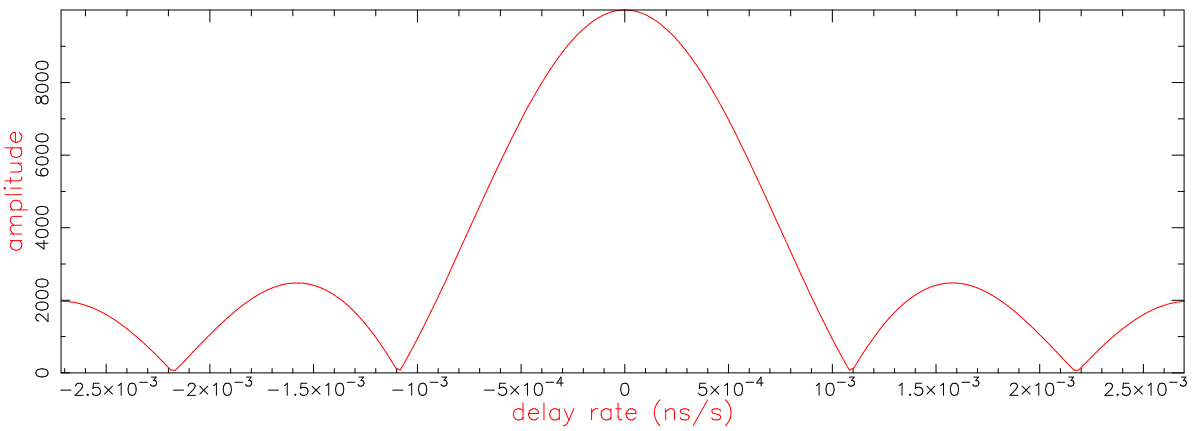
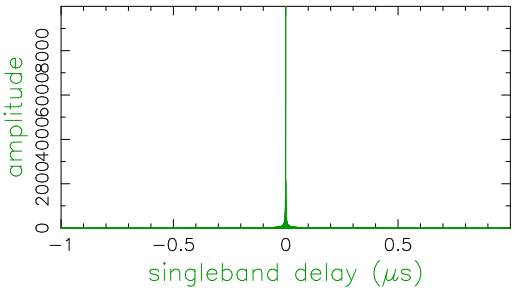
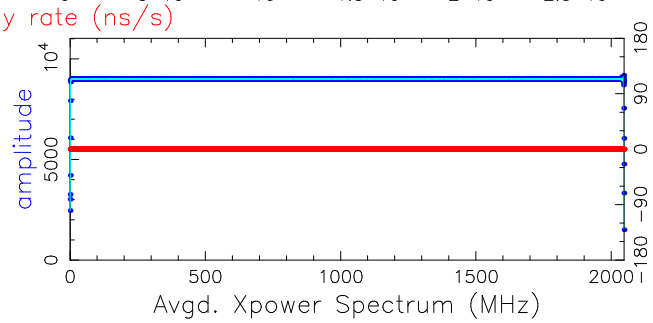
Mk4/DiFX fourfit 3.12 rev 1354

M87.yzyosc, 075-0558, cc
CARMA - CARMA, fgroup B, pol RR

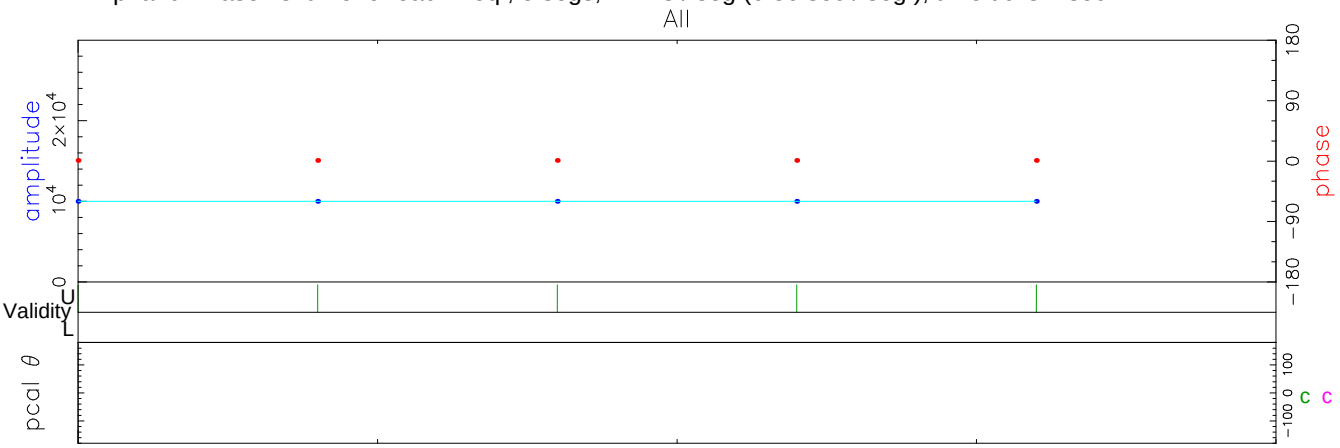






Fringe quality	9
SNR	109161.7
Int time	3.985
Amp	9998.099
Phase	0.9
PFD	0.0e+00
Delays (us)	
SBD	0.000000
MBD	-0.000003
Fringe rate (Hz)	
	0.000000
Ion TEC	0.000
Ref freq (MHz)	
	230000.0000
AP (sec)	0.800
Exp.	g3
Exper #	7001
Yr:day	2012:075
Start	055800.00
Stop	055804.00
FRT	055810.00
Corr/FF/build	
	2016:237:021211
	2016:237:021214
	2016:200:134124
RA & Dec (J2000)	
	12h30m49.4233s
	+12°23'28.043"

Amp. and Phase vs. time for each freq., 5 segs, 1 APs / seg (0.80 sec / seg.), time ticks 1 sec



	230000.00	Freq (MHz)
	0.9	Phase
	9998.1	Ampl.
	8193.0	Sbd box
U/L	5/0	APs used
c	-inf	PC R delays (ns)
c	-inf	PC R delays (ns)
c:c	0:0	PC phase
c:c	0:0	Manl PC
c	0	PC amp
c	0	
c	B00UR	Chan ids
c	B00UR	Chan ids

Group delay (usec)(model)	-2.56521739130E-06	Apriori delay (usec)	0.00000000000E+00	Resid mbdelay (usec)	-2.56522E-06	+/-	2.5E-09
Sband delay (usec)	0.00000000000E+00	Apriori clock (usec)	0.0000000E+00	Resid sbdelay (usec)	0.00000E+00	+/-	2.5E-09
Phase delay (usec)	1.14207939509E-08	Apriori clockrate (us/s)	0.0000000E+00	Resid phdelay (usec)	1.14208E-08	+/-	1.3E-11
Delay rate (us/s)	0.00000000000E+00	Apriori rate (us/s)	0.00000000000E+00	Resid rate (us/s)	0.00000E+00	+/-	5.5E-12
Total phase (deg)	0.9	Apriori accel (us/s/s)	0.00000000000E+00	Resid phase (deg)	0.9	+/-	0.0

	RMS	Theor.						
			Amplitude	9998.099 +/- 0.092	Pcal mode: MULTITONE, MULTITONE PC period (AP's) 5, 5			
ph/seg (deg)	0.0	0.0	Search (16X8)	9998.099	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: disabled		mb window (us)	-0.000 0.000
ph/frq (deg)	0.0	0.0	Inc. seg. avg.	9998.099	Sample rate(MSamp/s): 4096		dr window (ns/s)	-0.003 0.003
amp/frq (%)	0.0	0.0	Inc. frq. avg.	9998.099	Data rate(Mb/s): 8192 nlags: 8192 t_cohere infinite		ion window (TEC)	0.00 0.00

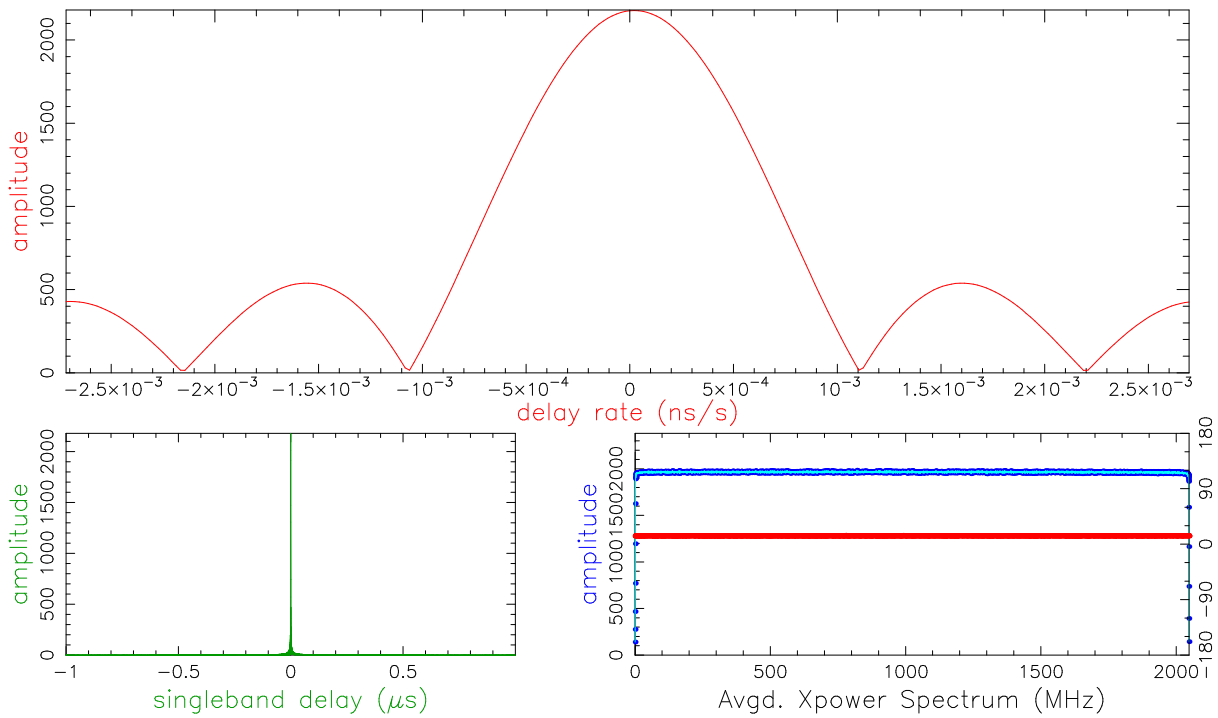
c: az 111.3 el 44.1 pa -49.4 c: az 111.3 el 44.1 pa -49.4 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

Control file: cf-7001 Input file: /data/lupin/g3-7001/7001/075-0558/cc..yzyosc Output file: /data/lupin/g3-7001/7001/075-0558/cc.B.4.yzyosc

Mk4/DiFX fourfit 3.12 rev 1354

M87.yzyosc, 075-0558, cL

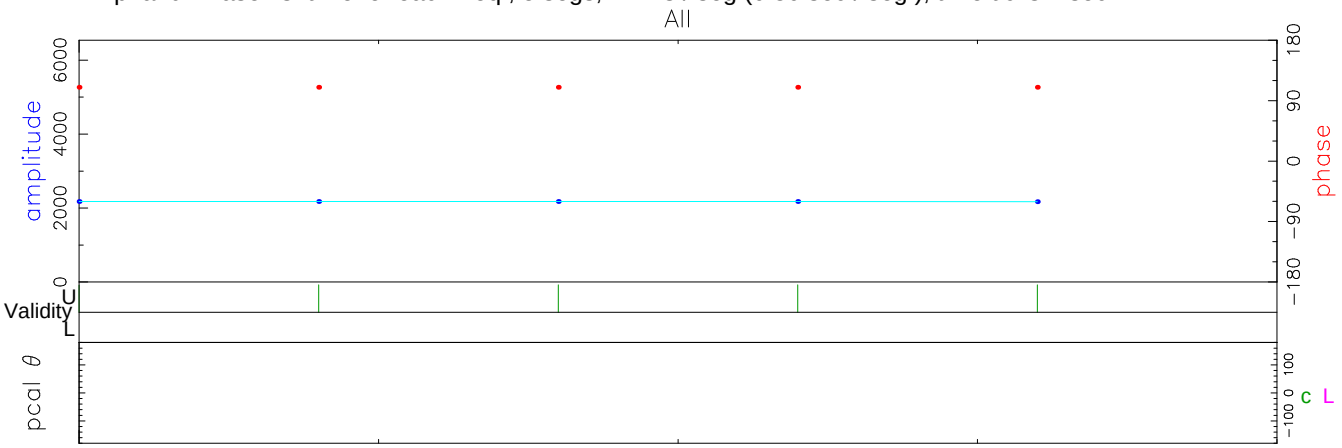
CARMA - SMA, fgroup B, pol RR



Fringe quality 9

SNR	23806.2
Int time	3.985
Amp	2180.456
Phase	110.0
PFD	0.0e+00
Delays (us)	
SBD	0.000258
MBD	-0.000003
Fringe rate (Hz)	
	0.004765
Ion TEC	0.000
Ref freq (MHz)	
	230000.0000
AP (sec)	0.800
Exp.	g3
Exper #	7001
Yr:day	2012:075
Start	055800.00
Stop	055804.00
FRT	055810.00
Corr/FF/build	
	2016:237:021211
	2016:237:021213
	2016:200:134124
RA & Dec (J2000)	
	12h30m49.4233s
	+12°23'28.043"

Amp. and Phase vs. time for each freq., 5 segs, 1 APs / seg (0.80 sec / seg.), time ticks 1 sec



	230000.00	Freq (MHz)
	110.0	Phase
	2177.4	Ampl.
	8195.1	Sbd box
U/L	5/0	APs used
c	-inf	PC R delays (ns)
L	-inf	PC R delays (ns)
c:L	0:0	PC phase
c:L	0:0	Manl PC
c	0	PC amp
L	0	
c	B00UR	Chan ids
L	B00UR	Chan ids

Group delay (usec)(model)	1.00642321161E+04	Apriori delay (usec)	1.00642321186E+04	Resid mbdelay (usec)	-2.50529E-06	+/-	1.1E-08
Sband delay (usec)	1.00642323771E+04	Apriori clock (usec)	0.0000000E+00	Resid sbdelay (usec)	2.58484E-04	+/-	1.1E-08
Phase delay (usec)	1.00642321199E+04	Apriori clockrate (us/s)	0.0000000E+00	Resid phdelay (usec)	1.32801E-06	+/-	5.8E-11
Delay rate (us/s)	-5.80797791593E-01	Apriori rate (us/s)	-5.80797812310E-01	Resid rate (us/s)	2.07174E-08	+/-	2.5E-11
Total phase (deg)	209.8	Apriori accel (us/s/s)	-4.71069846400E-05	Resid phase (deg)	110.0	+/-	0.0

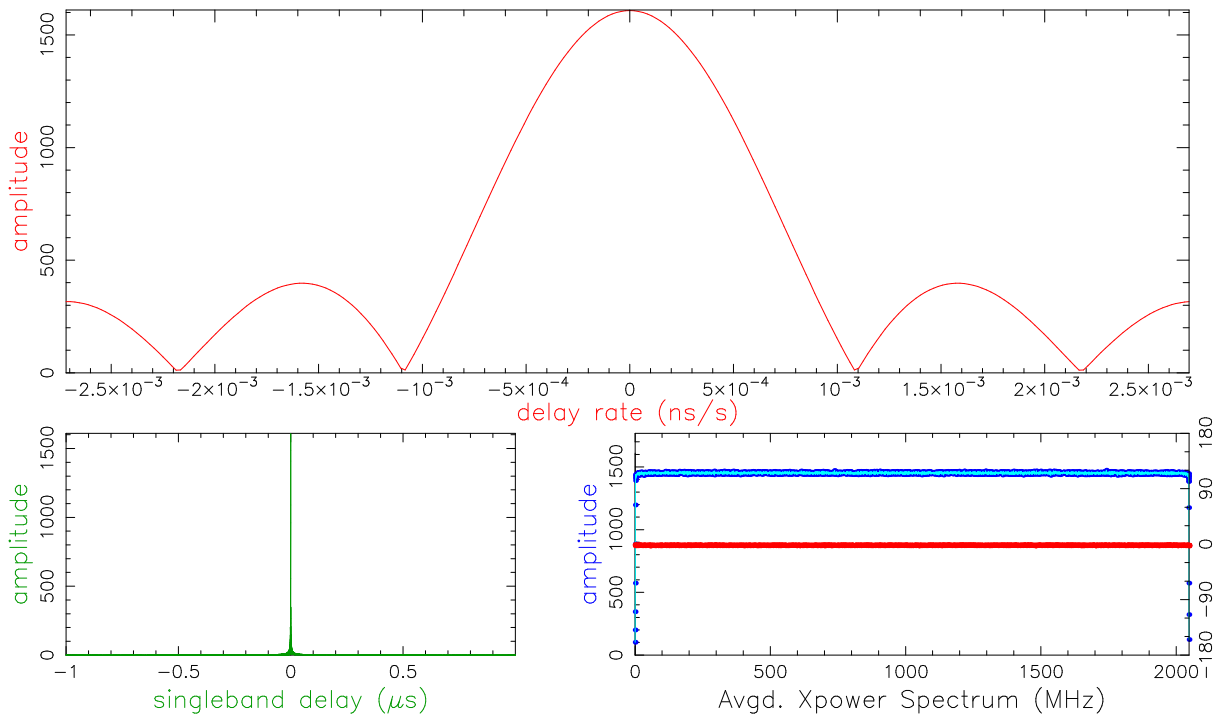
	RMS	Theor.						
			Amplitude	2180.456 +/- 0.092	Pcal mode: MULTITONE, MULTITONE PC period (AP's) 5, 5			
ph/seg (deg)	0.0	0.0	Search (16X8)	2176.083	Pcal rate: 0.000E+00, 0.000E+00 (us/s)		sb window (us)	-1.000 1.000
amp/seg (%)	0.2	0.0	Interp.	0.000	Bits/sample: 2x2 SampCntNorm: disabled		mb window (us)	-0.000 0.000
ph/frq (deg)	0.0	0.0	Inc. seg. avg.	2177.379	Sample rate(MSamp/s): 4096		dr window (ns/s)	-0.003 0.003
amp/frq (%)	0.1	0.0	Inc. frq. avg.	2177.379	Data rate(Mb/s): 8192 nlags: 8192 t_cohere infinite		ion window (TEC)	0.00 0.00

c: az 111.3 el 44.1 pa -49.4 L: az 81.4 el 12.9 pa -72.2 u,v (fr/asec) 9084.168 3990.021 simultaneous interpolator

Control file: cf-7001 Input file: /data/lupin/g3-7001/7001/075-0558/cL..yzyosc Output file: /data/lupin/g3-7001/7001/075-0558/cL.B.1.yzyosc

Mk4/DiFX fourfit 3.12 rev 1354

M87.yzyosc, 075-0558, cW
CARMA - SMTO, fgroup B, pol RR

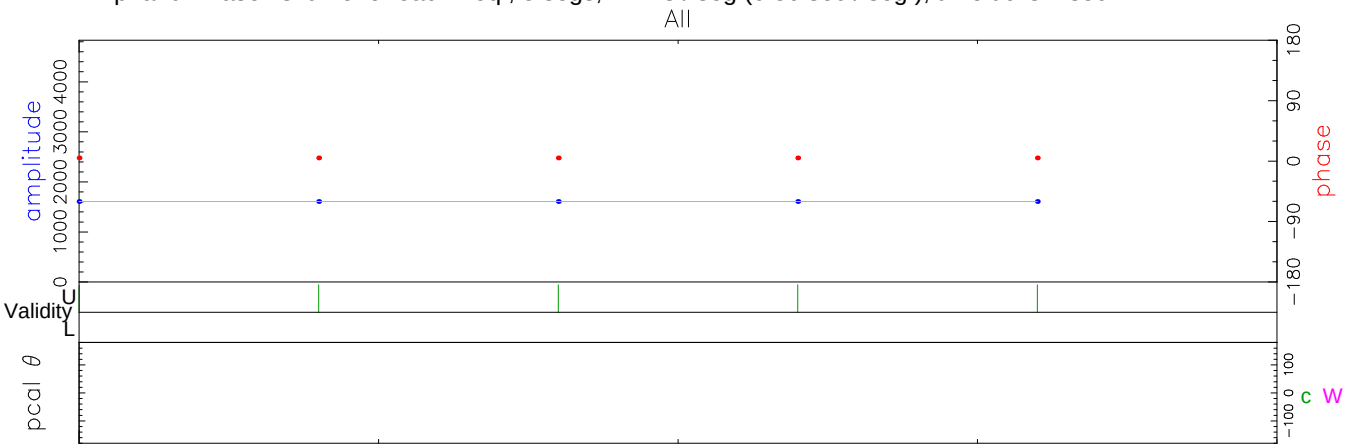


Fringe quality 9

SNR 17582.5
Int time 3.983
Amp 1610.779
Phase 4.6
PFD 0.0e+00
Delays (us)
SBD 0.000015
MBD -0.000002
Fringe rate (Hz)
-0.000695
Ion TEC 0.000
Ref freq (MHz)
230000.0000
AP (sec) 0.800

Exp. g3
Exper # 7001
Yr:day 2012:075
Start 055800.00
Stop 055804.00
FRT 055810.00
Corr/FF/build
2016:237:021211
2016:237:021213
2016:200:134124
RA & Dec (J2000)
12h30m49.4233s
+12°23'28.043"

Amp. and Phase vs. time for each freq., 5 segs, 1 APs / seg (0.80 sec / seg.), time ticks 1 sec



	230000.00	Freq (MHz)
	4.6	Phase
	1608.2	Ampl.
	8193.1	Sbd box
U/L	5/0	APs used
c	-inf	PC R delays (ns)
W	-inf	PC R delays (ns)
c:W	0:0	PC phase
c:W	0:0	Manl PC
c	0	PC amp
W	0	
c	B00UR	Chan ids
W	B00UR	Chan ids

Group delay (usec)(model)	-1.98724267681E+03	Apriori delay (usec)	-1.98724267439E+03	Resid mbdelay (usec)	-2.42626E-06	+/-	1.5E-08
Sband delay (usec)	-1.98724265897E+03	Apriori clock (usec)	0.0000000E+00	Resid sbdelay (usec)	1.54141E-05	+/-	1.5E-08
Phase delay (usec)	-1.98724267433E+03	Apriori clockrate (us/s)	0.0000000E+00	Resid phdelay (usec)	5.55039E-08	+/-	7.9E-11
Delay rate (us/s)	9.50760375849E-02	Apriori rate (us/s)	9.50760406066E-02	Resid rate (us/s)	-3.02174E-09	+/-	3.4E-11
Total phase (deg)	-34.5	Apriori accel (us/s/s)	1.21401177921E-05	Resid phase (deg)	4.6	+/-	0.0

	RMS	Theor.						
			Amplitude	1610.779 +/- 0.092	Pcal mode: MULTITONE, MULTITONE PC period (AP's) 5, 5			
ph/seg (deg)	0.0	0.0	Search (16X8)	1608.130	Pcal rate: 0.000E+00, 0.000E+00 (us/s)	sb window (us)	-1.000	1.000
amp/seg (%)	0.2	0.0	Interp.	0.000	Bits/sample: 2x2 SampCntNorm: disabled	mb window (us)	-0.000	0.000
ph/frq (deg)	0.0	0.0	Inc. seg. avg.	1608.151	Sample rate(MSamp/s): 4096	dr window (ns/s)	-0.003	0.003
amp/frq (%)	0.2	0.0	Inc. frq. avg.	1608.151	Data rate(Mb/s): 8192 nlags: 8192 t_cohere infinite	ion window (TEC)	0.00	0.00

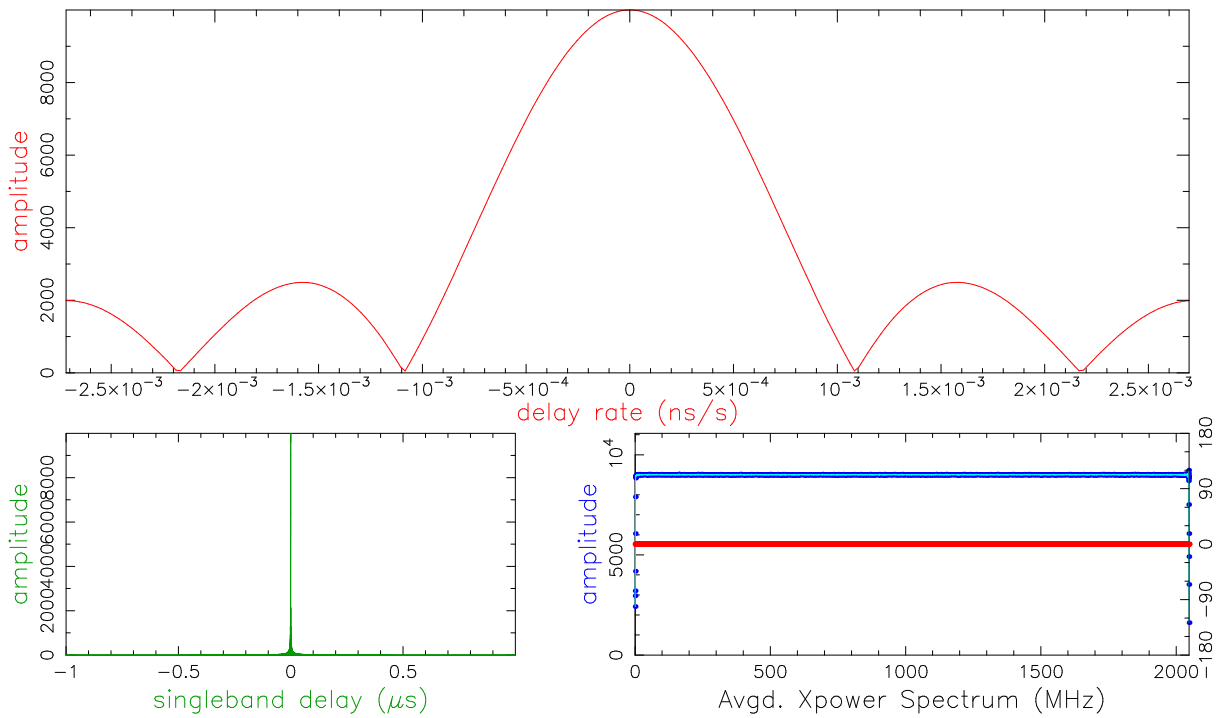
c: az 111.3 el 44.1 pa -49.4 W: az 114.3 el 52.1 pa -51.8 u,v (fr/asec) -1485.993 2066.929 simultaneous interpolator

Control file: cf-7001 Input file: /data/lupin/g3-7001/7001/075-0558/cW..yzyosc Output file: /data/lupin/g3-7001/7001/075-0558/cW.B.2.yzyosc

Mk4/DiFX fourfit 3.12 rev 1354

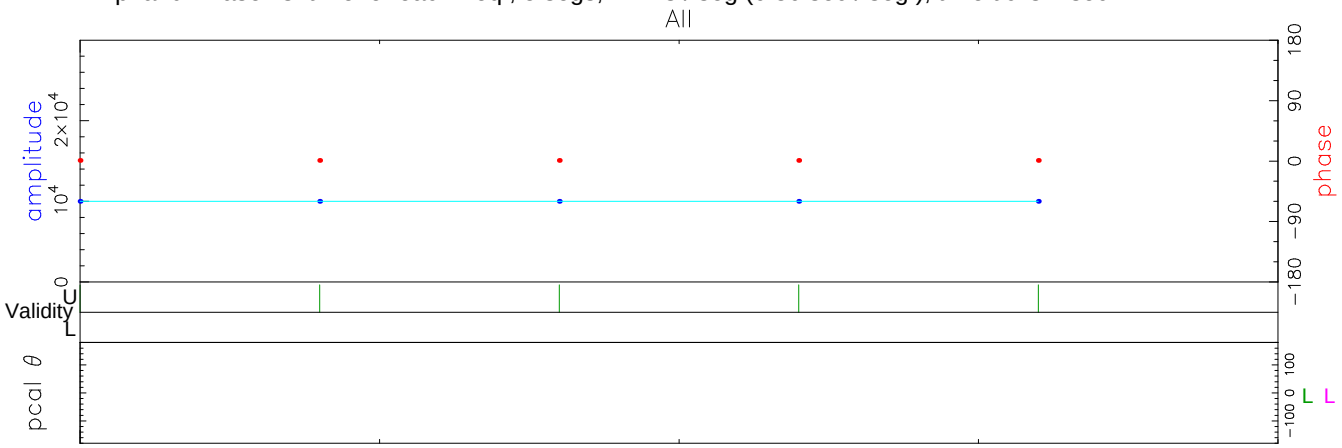
M87.yzyosc, 075-0558, LL

SMA - SMA, fgroup B, pol RR



Fringe quality	9
SNR	109299.7
Int time	3.995
Amp	9998.115
Phase	1.0
PFD	0.0e+00
Delays (us)	
SBD	0.000000
MBD	-0.000003
Fringe rate (Hz)	
	0.000000
Ion TEC	0.000
Ref freq (MHz)	
	230000.0000
AP (sec)	0.800
Exp.	g3
Exper #	7001
Yr:day	2012:075
Start	055800.00
Stop	055804.00
FRT	055810.00
Corr/FF/build	
	2016:237:021211
	2016:237:021214
	2016:200:134124
RA & Dec (J2000)	
	12h30m49.4233s
	+12°23'28.043"

Amp. and Phase vs. time for each freq., 5 segs, 1 APs / seg (0.80 sec / seg.), time ticks 1 sec



	230000.00	Freq (MHz)
	1.0	Phase
	9998.1	Ampl.
	8193.0	Sbd box
U/L	5/0	APs used
L	-inf	PC R delays (ns)
L	-inf	PC R delays (ns)
L:L	0:0	PC phase
L:L	0:0	Manl PC
L	0	PC amp
L	0	
L	B00UR	Chan ids
L	B00UR	Chan ids

Group delay (usec)(model)	-2.71500869565E-06	Apriori delay (usec)	0.00000000000E+00	Resid mbdelay (usec)	-2.71501E-06	+/-	2.5E-09
Sband delay (usec)	0.00000000000E+00	Apriori clock (usec)	0.0000000E+00	Resid sbdelay (usec)	0.00000E+00	+/-	2.5E-09
Phase delay (usec)	1.20876908885E-08	Apriori clockrate (us/s)	0.0000000E+00	Resid phdelay (usec)	1.20877E-08	+/-	1.3E-11
Delay rate (us/s)	0.00000000000E+00	Apriori rate (us/s)	0.00000000000E+00	Resid rate (us/s)	0.00000E+00	+/-	5.5E-12
Total phase (deg)	1.0	Apriori accel (us/s/s)	0.00000000000E+00	Resid phase (deg)	1.0	+/-	0.0

	RMS	Theor.						
			Amplitude	9998.114 +/- 0.091	Pcal mode: MULTITONE, MULTITONE PC period (AP's) 5, 5			
ph/seg (deg)	0.0	0.0	Search (16X8)	9998.115	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: disabled	mb window (us)	-0.000 0.000
ph/frq (deg)	0.0	0.0	Inc. seg. avg.	9998.115	Sample rate(MSamp/s): 4096		dr window (ns/s)	-0.003 0.003
amp/frq (%)	0.0	0.0	Inc. frq. avg.	9998.114	Data rate(Mb/s): 8192	nlags: 8192 t_cohere infinite	ion window (TEC)	0.00 0.00

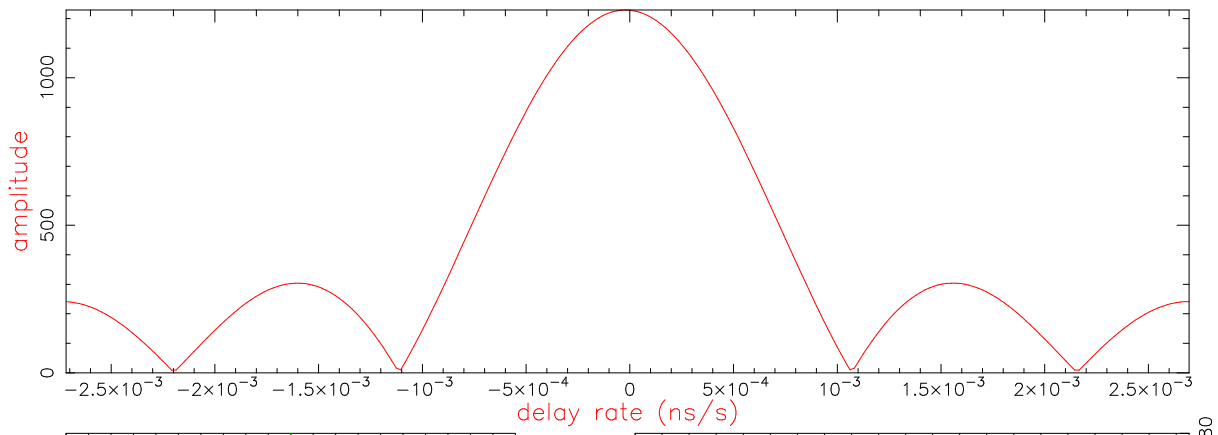
L: az 81.4 el 12.9 pa -72.2 L: az 81.4 el 12.9 pa -72.2 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

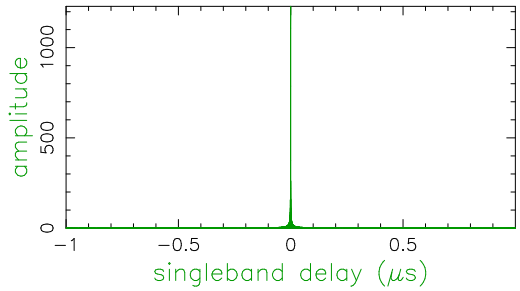
Control file: cf-7001 Input file: /data/lupin/g3-7001/7001/075-0558/LL..yzyosc Output file: /data/lupin/g3-7001/7001/075-0558/LL.B.5.yzyosc

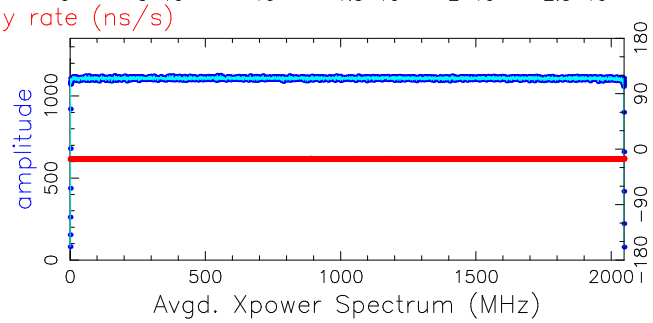
Mk4/DiFX fourfit 3.12 rev 1354

M87.yzyosc, 075-0558, LW

SMA - SMTO, fgroup B, pol RR





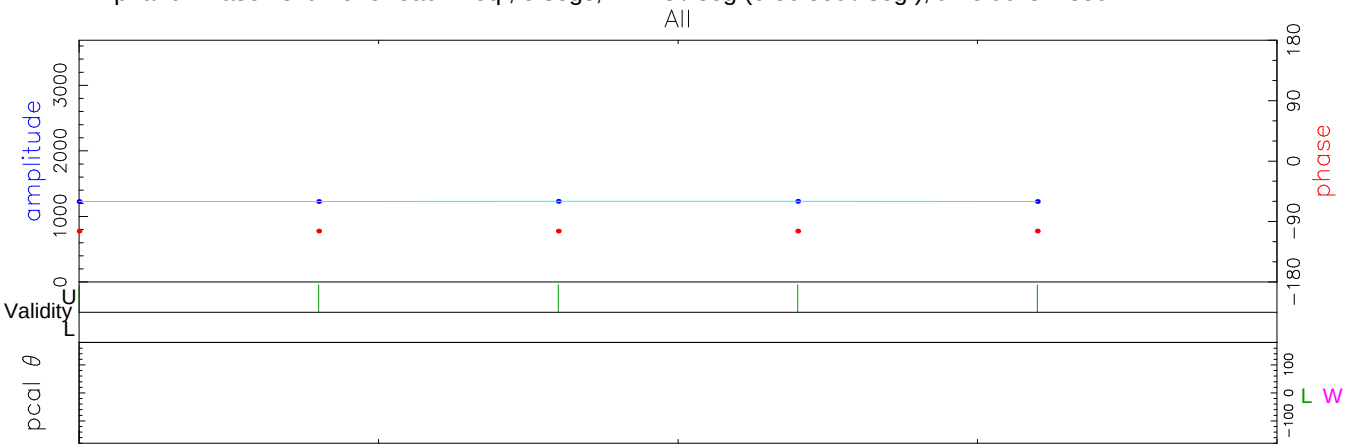


Fringe quality 9

SNR 13421.6
Int time 3.983
Amp 1229.624
Phase -104.3
PFD 0.0e+00
Delays (us)
SBD -0.000243
MBD -0.000003
Fringe rate (Hz)
-0.005440
Ion TEC 0.000
Ref freq (MHz)
230000.0000
AP (sec) 0.800

Exp. g3
Exper # 7001
Yr:day 2012:075
Start 055800.00
Stop 055804.00
FRT 055810.00
Corr/FF/build
2016:237:021211
2016:237:021213
2016:200:134124
RA & Dec (J2000)
12h30m49.4233s
+12°23'28.043"

Amp. and Phase vs. time for each freq., 5 segs, 1 APs / seg (0.80 sec / seg.), time ticks 1 sec



	230000.00	Freq (MHz)
	-104.3	Phase
	1229.6	Ampl.
	8191.0	Sbd box
U/L	5/0	APs used
L	-inf	PC R delays (ns)
W	-inf	PC R delays (ns)
L:W	0:0	PC phase
L:W	0:0	Manl PC
L	0	PC amp
W	0	
L	B00UR	Chan ids
W	B00UR	Chan ids

Group delay (usec)(model)	-1.20514747957E+04	Apriori delay (usec)	-1.20514747930E+04	Resid mbdelay (usec)	-2.71641E-06	+/-	2.0E-08
Sband delay (usec)	-1.20514750361E+04	Apriori clock (usec)	0.0000000E+00	Resid sbdelay (usec)	-2.43086E-04	+/-	2.0E-08
Phase delay (usec)	-1.20514747942E+04	Apriori clockrate (us/s)	0.0000000E+00	Resid phdelay (usec)	-1.25939E-06	+/-	1.0E-10
Delay rate (us/s)	6.75873829265E-01	Apriori rate (us/s)	6.75873852917E-01	Resid rate (us/s)	-2.36522E-08	+/-	4.5E-11
Total phase (deg)	-243.3	Apriori accel (us/s/s)	5.92471024321E-05	Resid phase (deg)	-104.3	+/-	0.0

	RMS	Theor.						
			Amplitude	1229.624 +/- 0.092	Pcal mode: MULTITONE, MULTITONE PC period (AP's) 5, 5			
ph/seg (deg)	0.0	0.0	Search (16X8)	1228.661	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: disabled		mb window (us)	-0.000 0.000
ph/frq (deg)	0.0	0.0	Inc. seg. avg.	1229.615	Sample rate(MSamp/s): 4096		dr window (ns/s)	-0.003 0.003
amp/frq (%)	0.0	0.0	Inc. frq. avg.	1229.615	Data rate(Mb/s): 8192 nlags: 8192 t_cohere infinite		ion window (TEC)	0.00 0.00

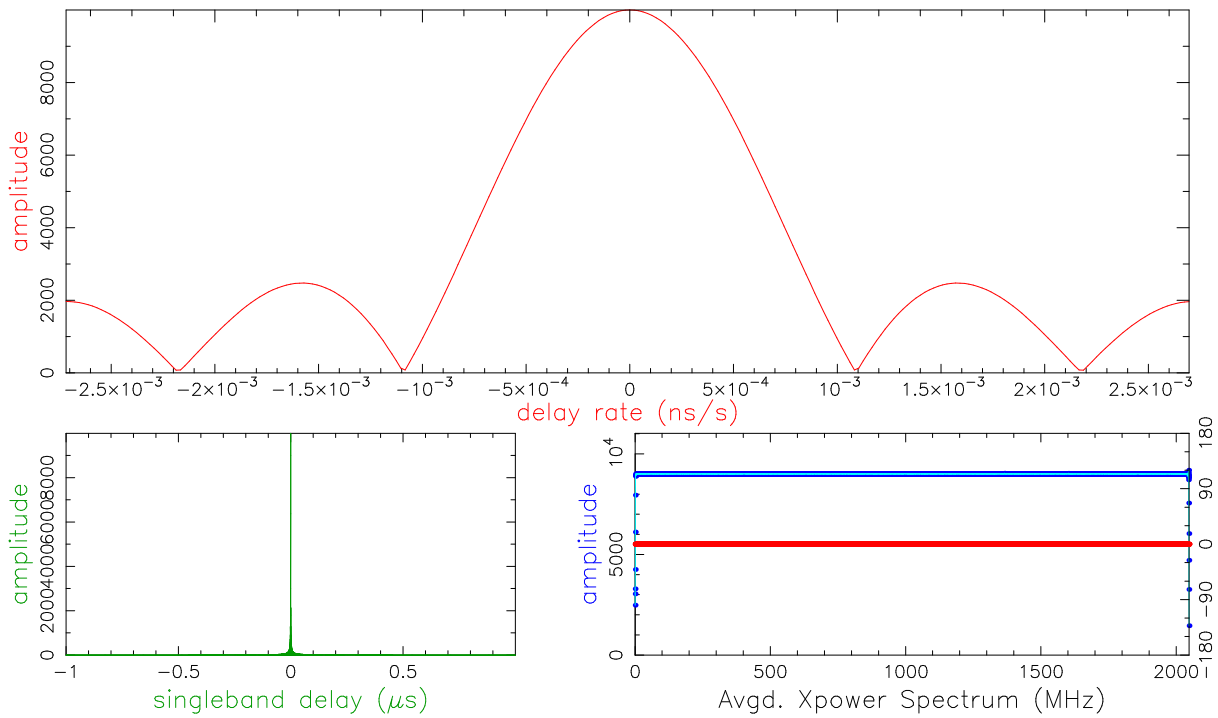
L: az 81.4 el 12.9 pa -72.2 W: az 114.3 el 52.1 pa -51.8 u,v (fr/asec) -10570.161 -1923.092 simultaneous interpolator

Control file: cf-7001 Input file: /data/lupin/g3-7001/7001/075-0558/LW..yzyosc Output file: /data/lupin/g3-7001/7001/075-0558/LW.B.3.yzyosc

Mk4/DiFX fourfit 3.12 rev 1354

M87.yzyosc, 075-0558, WW

SMTO - SMTO, fgroup B, pol RR

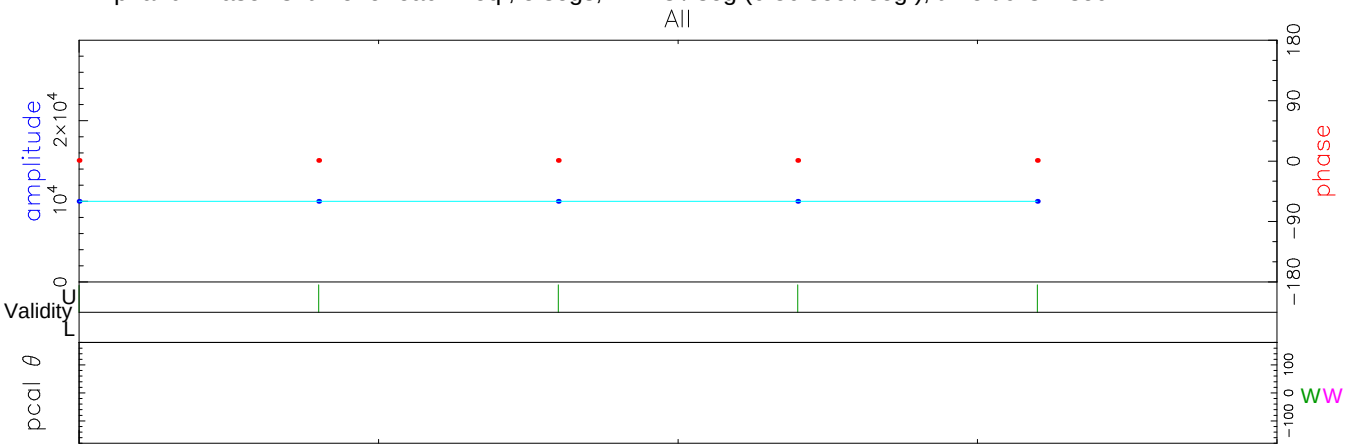


Fringe quality 9

SNR 109134.4
Int time 3.983
Amp 9998.099
Phase 0.9
PFD 0.0e+00
Delays (us)
SBD 0.000000
MBD -0.000003
Fringe rate (Hz)
0.000000
Ion TEC 0.000
Ref freq (MHz)
230000.0000
AP (sec) 0.800

Exp. g3
Exper # 7001
Yr:day 2012:075
Start 055800.00
Stop 055804.00
FRT 055810.00
Corr/FF/build
2016:237:021211
2016:237:021214
2016:200:134124
RA & Dec (J2000)
12h30m49.4233s
+12°23'28.043"

Amp. and Phase vs. time for each freq., 5 segs, 1 APs / seg (0.80 sec / seg.), time ticks 1 sec



	230000.00	Freq (MHz)
	0.9	Phase
	9998.1	Ampl.
	8193.0	Sbd box
U/L	5/0	APs used
W	-inf	PC R delays (ns)
W	-inf	PC R delays (ns)
W:W	0:0	PC phase
W:W	0:0	Manl PC
W	0	PC amp
W	B00UR	Chan ids
W	B00UR	Chan ids

Group delay (usec)(model)	-2.56573913043E-06	Apriori delay (usec)	0.00000000000E+00	Resid mbdelay (usec)	-2.56574E-06	+/-	2.5E-09
Sband delay (usec)	0.00000000000E+00	Apriori clock (usec)	0.0000000E+00	Resid sbdelay (usec)	0.00000E+00	+/-	2.5E-09
Phase delay (usec)	1.14231168242E-08	Apriori clockrate (us/s)	0.0000000E+00	Resid phdelay (usec)	1.14231E-08	+/-	1.3E-11
Delay rate (us/s)	0.00000000000E+00	Apriori rate (us/s)	0.00000000000E+00	Resid rate (us/s)	0.00000E+00	+/-	5.5E-12
Total phase (deg)	0.9	Apriori accel (us/s/s)	0.00000000000E+00	Resid phase (deg)	0.9	+/-	0.0

	RMS	Theor.					
ph/seg (deg)	0.0	0.0	Amplitude	9998.099 +/- 0.092	Pcal mode: MULTITONE, MULTITONE PC period (AP's) 5, 5		
amp/seg (%)	0.0	0.0	Search (16X8)	9998.098	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: disabled	mb window (us)	-0.000 0.000
amp/frq (%)	0.0	0.0	Inc. seg. avg.	9998.098	Sample rate(MSamp/s): 4096	dr window (ns/s)	-0.003 0.003
			Inc. frq. avg.	9998.099	Data rate(Mb/s): 8192 nlags: 8192 t_cohere infinite	ion window (TEC)	0.00 0.00

W: az 114.3 el 52.1 pa -51.8 W: az 114.3 el 52.1 pa -51.8 u,v (fr/asec) 0.000 0.000 simultaneous interpolator

Control file: cf-7001 Input file: /data/lupin/g3-7001/7001/075-0558/WW..yzyosc Output file: /data/lupin/g3-7001/7001/075-0558/WW.B.6.yzyosc