

Written to file: uid\_\_A002\_X3b55d6\_X875.ms.NewListObs.txt

DV07	238.8	29.9	6.3	21	99	
DV09	71.6	18.8	3.8	20	100	
DV10	145.8	25.7	5.3	21	99	
DV11	103.3	20.0	5.3	27	99	
DV12	74.6	19.6	2.1	11	100	
DV13	144.7	20.6	7.4	36	98	
DV15	200.7	19.2	35.8	18	66	NOT IMPROVED
DV16	168.1	22.7	12.5	55	95	
DV17	229.3	39.2	7.3	19	98	
DV18	132.4	177.4	6.9	4	99	
PM01	61.8	21.3	4.8	23	99	

## SCAN LISTING

Scan	FldId	srcId	FieldName	StartTime	StopTime	Int(s)	Elev	ScanIntent
1	0	0	3C279	06:36:43.3	- 06:38:16.6	1.01	61.6	Cal Pointing
2	0	0	3C279	06:39:07.3	- 06:40:22.5	1.01	61.2	Cal Sideband
3	0	0	3C279	06:41:10.5	- 06:41:39.0	1.01	60.8	Cal atmosphere
4	0	0	3C279	06:42:32.3	- 06:46:28.1	1.01	60.2	Cal Bandpass
5	1	1	Titan	06:47:24.9	- 06:47:52.8	1.01	70.1	Cal atmosphere
6	1	1	Titan	06:48:46.7	- 06:54:04.1	1.01	69.5	Cal Phase, Bandpass
7	2	2	J1332+0200	06:55:09.2	- 06:56:42.7	1.01	59.0	Cal Pointing
8	2	2	J1332+0200	06:57:51.6	- 06:58:20.0	1.01	58.6	Cal atmosphere
9	2	2	J1332+0200	06:59:12.3	- 06:59:43.1	1.01	58.4	Cal Phase
10	3	3	Abell 1835	07:00:39.8	- 07:01:07.9	1.01	61.2	Cal atmosphere
11	3	3	Abell 1835	07:02:02.8	- 07:10:04.4	1.01	60.6	Obs Target
12	2	2	J1332+0200	07:10:38.9	- 07:11:06.5	1.01	56.7	Cal atmosphere
13	2	2	J1332+0200	07:11:44.5	- 07:12:15.1	1.01	56.5	Cal Phase
14	3	3	Abell 1835	07:12:49.0	- 07:13:17.1	1.01	59.7	Cal atmosphere
15	3	3	Abell 1835	07:13:56.9	- 07:21:57.6	1.01	59.1	Obs Target
16	2	2	J1332+0200	07:22:31.9	- 07:22:59.3	1.01	54.7	Cal atmosphere
17	2	2	J1332+0200	07:23:36.5	- 07:24:07.6	1.01	54.5	Cal Phase
18	3	3	Abell 1835	07:24:42.1	- 07:25:09.6	1.01	58.1	Cal atmosphere
19	3	3	Abell 1835	07:25:48.9	- 07:33:49.8	1.01	57.4	Obs Target
20	2	2	J1332+0200	07:34:26.2	- 07:34:54.1	1.01	52.6	Cal atmosphere
21	2	2	J1332+0200	07:35:39.9	- 07:36:10.4	1.01	52.3	Cal Phase
22	3	3	Abell 1835	07:36:46.7	- 07:37:14.8	1.01	56.3	Cal atmosphere
23	3	3	Abell 1835	07:38:02.8	- 07:46:04.2	1.01	55.5	Obs Target
24	2	2	J1332+0200	07:46:37.7	- 07:47:05.5	1.01	50.3	Cal atmosphere
25	2	2	J1332+0200	07:47:42.2	- 07:48:12.6	1.01	50.1	Cal Phase
26	3	3	Abell 1835	07:48:49.0	- 07:49:17.2	1.01	54.3	Cal atmosphere
27	3	3	Abell 1835	07:49:55.8	- 07:57:57.4	1.01	53.5	Obs Target
28	2	2	J1332+0200	07:58:30.8	- 07:58:58.3	1.01	48.0	Cal atmosphere
29	2	2	J1332+0200	07:59:34.2	- 08:00:05.3	1.01	47.8	Cal Phase

## FIELD INFORMATION

Fid	Srd	Field	RA (J2000)	DEC	Fld Time (min)	#Scans
0	0	3C279	12:56:11.16658	-05:47:21.5246	7.21	4
1	1	Titan	13:45:47.22193	-07:57:24.1646	5.75	2
2	2	J1332+0200	13:32:53.65992	+02:00:43.8984	7.41	13
3	3	Abell 1835	14:01:02.06880	+02:52:43.2120	42.43	10

FREQUENCY INFORMATION

spw	nchan	-----Frequencies (GHz)-----			--Channel Width--		
		First	Last	Bandwidth	MHz	km/s	POIN
0	4	184.550	189.550	7.500	15.625	50.91	['I']
1	128	91.986762	90.002387	2.000	15.625	50.91	['XX', 'YY']
2	1	90.978950	90.978950	1.797	1796.875	5919.21	['XX', 'YY']
3	128	93.924262	91.939867	2.000	15.625	49.86	['XX', 'YY']
4	1	92.916450	92.916450	1.797	1796.875	5795.78	['XX', 'YY']
5	128	102.002387	103.986762	2.000	15.625	45.91	['XX', 'YY']
6	1	102.978950	102.978950	1.797	1796.875	5229.45	['XX', 'YY']
7	128	104.002387	105.986762	2.000	15.625	45.03	['XX', 'YY']
8	1	104.978950	104.978950	1.797	1796.875	5129.82	['XX', 'YY']
9	128	107.019673	107.035298	2.000	15.625	16.90	['XX', 'YY']
10	1	276.011860	276.011860	1.797	1796.875	1951.09	['XX', 'YY']
11	128	278.592187	276.607812	2.000	15.625	16.81	['XX', 'YY']
12	1	277.584375	277.584375	1.797	1796.875	1940.04	['XX', 'YY']
13	128	287.055797	289.040172	2.000	15.625	16.31	['XX', 'YY']
14	1	288.032360	288.032360	1.797	1796.875	1869.66	['XX', 'YY']
15	128	288.085097	290.790172	2.000	15.625	16.21	['XX', 'YY']
16	1	289.782360	289.782360	1.797	1796.875	1858.37	['XX', 'YY']
17	3840	276.964741	275.090229	1.875	0.488	0.53	['XX', 'YY']
18	1	276.027241	276.027241	1.875	1875.000	2035.80	['XX', 'YY']
19	3840	278.537256	276.662744	1.875	0.488	0.53	['XX', 'YY']
20	1	277.599756	277.599756	1.875	1875.000	2024.27	['XX', 'YY']
21	3840	287.110729	288.985241	1.875	0.488	0.51	['XX', 'YY']
22	1	288.047741	288.047741	1.875	1875.000	1950.85	['XX', 'YY']
23	3840	288.060729	290.735241	1.875	0.488	0.51	['XX', 'YY']

## ANTENNA INFORMATION

ID	Name	Pad	Size (m)	Longitude	Latitude	E-off (m)	N-off (m)	Elev (m)
0	DA41	A003	12.0	-67.45,15.50	-22.53,27.00	34.9	20.9	0.4
1	DA43	A075	12.0	-67.45,17.90	-22.53,21.41	-5.2	193.9	1.5
2	DA44	A068	12.0	-67.45,20.64	-22.53,25.68	-83.0	61.8	0.1
3	DV03	A137	12.0	-67.45,15.25	-22.53,22.73	70.5	153.1	-0.4
4	DV05	A082	12.0	-67.45,08.30	-22.53,29.21	268.4	-47.4	-5.2
5	DV07	A076	12.0	-67.45,20.48	-22.53,33.79	-78.6	-189.1	3.1
6	DV09	A046	12.0	-67.45,16.99	-22.53,29.27	20.8	-49.2	0.2
7	DV10	A071	12.0	-67.45,19.88	-22.53,23.46	-61.4	130.3	2.4
8	DV11	A045	12.0	-67.45,17.93	-22.53,30.07	-6.0	-73.9	1.1
9	DV12	A011	12.0	-67.45,14.38	-22.53,28.42	95.3	-22.9	0.1
10	DV13	A072	12.0	-67.45,12.58	-22.53,24.03	146.5	113.0	-2.8
11	DV15	A074	12.0	-67.45,12.07	-22.53,32.04	161.2	-135.0	-2.2
12	DV16	A069	12.0	-67.45,21.31	-22.53,30.15	-102.1	-76.5	2.3
13	DV17	A138	12.0	-67.45,17.07	-22.53,34.39	18.5	-207.7	5.0
14	DV18	A053	12.0	-67.45,17.30	-22.53,31.22	12.0	-109.4	0.5
15	PM01	A037	12.0	-67.45,17.51	-22.53,28.77	6.1	-33.7	0.2

\*\*\*\*\*

Bandpass scan=4; spw=17; pol=X

## PHASE FLUCTUATIONS OVER BANDPASS SCAN

BEFORE AND AFTER WVR CORRECTION: uid A002\_X3b55d6\_X875.ms.wvr.smooth

Ant	spacing (m)	rms_before (deg)	rms_after (deg)	Percent before/after	Coherence percent
DA43	177.5	29.2	9.2	32	97
DA44	124.8	14.3	5.7	40	99
DV03	136.9	22.1	8.2	37	98
DV05	243.4	29.5	4.3	14	99

## wvrgcal output of average wvr for each antenna

#	Name	WVR?	Flag?	RMS (um)	Disc (um)
0	DM41	Yes	No	173	47
1	DM43	Yes	No	193	45.1
2	DM44	Yes	No	176	37.6
3	DV03	Yes	No	188	23.6
4	DV05	Yes	No	179	24.7
5	DV07	Yes	No	164	23.8
6	DV09	Yes	No	176	28.7
7	DV10	Yes	No	180	21.2
8	DV11	Yes	No	174	32.4
9	DV12	Yes	No	181	24.4
10	DV13	Yes	No	193	27.7
11	DV15	Yes	No	201	199
12	DV16	Yes	No	180	27.1
13	DV17	Yes	No	159	21.1
14	DV18	Yes	No	180	21.6
15	PM01	Yes	No	185	25.7

```
* Estimated WVR thermal contribution to path fluctuations (micron per antenna): 5.780
* Greatest Estimated path fluctuation is (micron on a baseline): 203.318
* Rough estimate path error due to coefficient error (micron on a baseline): 3.2662
```

## MEDIAN TSYS WITH SOURCE/ELEVATION

Scan	Fid	Source	Elev	Median T_x	Median T_y
3	0	3C279	60.8	106	101
5	1	Titan	70.1	101	99
8	2	J1332+0200	58.6	104	101
10	3	Abell 1835	61.2	103	101
12	2	J1332+0200	56.7	105	102
14	3	Abell 1835	59.7	104	101
16	2	J1332+0200	54.7	106	104
18	3	Abell 1835	58.1	105	102
20	2	J1332+0200	52.6	107	104
22	3	Abell 1835	56.3	105	102
24	2	J1332+0200	50.3	108	106
26	3	Abell 1835	54.3	106	103
28	2	J1332+0200	48.0	112	109

### MEDIAN TSYS versus ANTENNA/SPW and OUTLIERS

TSYS MEDIAN					>3-sigma OUTLIERS			
SPW	XPOL		YPOL		OUTLIERS			
	T	rms	T	rms	antenna	Pol	tsys	n-sigma
0	102	43	101	27				
1	98	38	95	23				
2	111	32	110	32				
3	112	41	111	33				

SUMMARY INFORMATION FOR uid\_\_A002\_X3b55d6\_X875.ms.split

Experiment Duration: 2012/03/28/06:42:33 to  
2012/03/28/08:00:05

```
Processed from ms: uid__A002_X3b55d6_X875.ms.split
Written to file:  uid__A002_X3b55d6_X875.ms.split
```

## SCAN LISTING

Scan	FidId	srcId	FieldName	StartTime	StopTime	Int(s)	Elev	ScanIntent
4	0	0	3C279	06:42:33.1	06:46:28.1	6.05	60.3	Cal Bandpa
6	1	1	Titan	06:48:47.2	06:54:04.1	6.05	69.6	Cal Phase
9	2	2	J1332+0200	06:59:12.8	06:59:43.1	6.05	58.5	Cal Phase
11	3	3	Abell 1835	07:02:03.7	07:10:04.4	6.05	60.7	Obs Target
13	2	2	J1332+0200	07:11:44.8	07:12:15.1	6.05	56.6	Cal Phase
15	3	3	Abell 1835	07:13:56.9	07:21:57.6	6.05	59.2	Obs Target
17	2	2	J1332+0200	07:23:37.4	07:24:07.6	6.05	54.6	Cal Phase
19	3	3	Abell 1835	07:25:49.2	07:33:49.8	6.05	57.5	Obs Target
21	2	2	J1332+0200	07:35:40.2	07:36:10.4	6.05	52.4	Cal Phase
23	3	3	Abell 1835	07:38:03.6	07:46:04.2	6.05	55.6	Obs Target
25	2	2	J1332+0200	07:47:42.3	07:48:12.6	6.05	50.2	Cal Phase
27	3	3	Abell 1835	07:49:56.7	07:57:57.4	6.05	53.6	Obs Target
29	2	2	J1332+0200	07:59:35.1	08:00:05.3	6.05	47.9	Cal Phase

## FIELD INFORMATION

Fid	Srd	Field	RA (J2000)	DEC	Fld Time (min)	#Scans
0	0	3C279	12:56:11.16658	-05:47.21.5246	3.92	1
1	1	Titan	13:45:47.22193	-07:57.24.1646	5.28	1
2	2	J1332+0200	13:32:53.65992	+02:00.43.8984	3.02	6
3	3	Abell 1835	14:01:02.06880	+02:52.43.2120	40.05	5

FREQUENCY INFORMATION

spw	nchan	-----Frequencies (GHz)-----			--Channel	Width--	
		First	Last	Bandwidth	MHz	km/s	POLN
0	3840	276.964741	275.090229	1.875	0.488	0.53	['XX', 'YY']
1	3840	278.537256	276.662744	1.875	0.488	0.53	['XX', 'YY']
2	3840	287.110729	288.985241	1.875	0.488	0.51	['XX', 'YY']
3	3840	288.860729	290.735241	1.875	0.488	0.51	['XX', 'YY']

### ANTENNA INFORMATION

ID	Name	Pad	Size (m)	Longitude	Latitude	E-off (m)	N-off (m)	Elev (m)
0	DA41	A003	12.0	-67.45.16.50	-22.53.27.00	34.9	20.9	0.4
1	DA43	A075	12.0	-67.45.17.90	-22.53.21.41	-5.2	193.9	1.5
2	DA44	A068	12.0	-67.45.20.64	-22.53.25.68	-83.0	61.8	2.1
3	DV03	Al37	12.0	-67.45.15.25	-22.53.22.73	70.5	153.1	-0.4
4	DV05	A082	12.0	-67.45.08.30	-22.53.29.21	268.4	-47.4	-5.2
5	DV07	A076	12.0	-67.45.20.48	-22.53.33.79	-78.6	-189.1	3.1
6	DV09	A046	12.0	-67.45.16.99	-22.53.29.27	20.8	-49.2	0.2
7	DV10	A071	12.0	-67.45.19.88	-22.53.23.46	-61.4	130.3	2.4
8	DV11	A045	12.0	-67.45.17.93	-22.53.30.07	-6.0	-73.9	1.1
9	DV12	A011	12.0	-67.45.14.38	-22.53.28.42	95.3	-22.9	0.1
10	DV13	A072	12.0	-67.45.12.58	-22.53.24.03	146.5	113.0	-2.8
11	DV15	A074	12.0	-67.45.12.07	-22.53.32.04	161.2	-135.0	-2.2
12	DV16	A069	12.0	-67.45.21.31	-22.53.30.15	-102.1	-76.5	2.3
13	DV17	Al38	12.0	-67.45.17.07	-22.53.34.39	18.5	-207.7	5.0
14	DV18	A053	12.0	-67.45.17.30	-22.53.31.22	12.0	-109.4	0.5
15	FM01	A037	12.0	-67.45.17.51	-22.53.28.77	6.1	-33.7	0.2

Per antenna (over total of dataset):  
 FM01 -> 0.00  
 DV18 -> 0.00  
 DV12 -> 0.00  
 DV10 -> 0.00  
 DV09 -> 0.00  
 DV11 -> 0.00  
 DA44 -> 0.00  
 DV13 -> 0.00  
 DV05 -> 0.00  
 DA41 -> 0.00  
 DV03 -> 0.00  
 DA43 -> 0.00  
 DV16 -> 0.00  
 DV17 -> 0.00  
 DV07 -> 0.00  
 DV15 -> 0.01

\*\*\*\*\*

MEDIAN GAIN VALUE = 0.491

RELATIVE ANTENNA GAIN FOR BANDPASS OBSERVATION

Antenna	SPW0		SPW1		SPW2		SPW
	X	Y	X	Y	X	Y	X
0-DA41	0.92	0.92	0.89**	0.93	0.86**	0.90**	0.09**
1-DA43	0.91	0.94	0.89**	0.91	0.87**	0.91	0.09**
2-DA44	0.85**	0.84**	0.82**	0.82**	0.80**	0.80**	0.07**
3-DV03	1.09	1.11**	1.05	1.06	1.09	1.08	0.11**
4-DV05	1.08	1.09	1.10**	1.07	1.09	1.05	0.11**
5-DV07	1.09	1.12**	1.10**	1.11**	1.09	1.09	0.10**
6-DV09	1.08	1.12**	1.09	1.11**	1.07	1.10**	0.09**
7-DV10	1.08	1.02	1.10**	1.05	1.11**	1.00	0.11**
8-DV11	1.03	1.06	1.06	1.03	1.03	1.01	0.10**
9-DV12	1.04	1.06	0.99	1.00	0.98	1.02	0.10**
10-DV13	1.08	1.08	1.09	1.11**	1.07	1.07	0.10**
11-DV15	1.04	1.03	1.07	1.04	1.01	1.01	0.09**
12-DV16	1.02	1.05	1.01	1.02	1.00	1.06	0.09**
13-DV17	0.99	0.96	1.01	0.98	1.00	0.95	0.09**
14-DV18	1.03	1.05	1.02	1.05	1.01	1.06	0.10**
15-FM01	0.94	0.91	0.96	0.93	0.90	0.91	0.08**

\*\* means outside of normalized range: 0.90 to 1.10

\*\*\*\*\*

NORMALIZED BANDPASS AMPLITUDE RMS OVER 3840 CHANNELS  
 using table uid\_\_\_\_\_A002\_X3b55d6\_X875.ms.split.bandpass

Antenna	SPW0		SPW1		SPW2		SPW3	
	X	Y	X	Y	X	Y	X	Y
0-DA41	0.026	0.037	0.023	0.032	0.041	0.040		
1-DA43	0.022	0.019	0.028	0.034	0.040	0.036		
2-DA44	0.039	0.020	0.032	0.024	0.051	0.047		
3-DV03	0.023	0.045	0.047	0.039	0.040	0.036		
4-DV05	0.014	0.023	0.015	0.034	0.042	0.042		
5-DV07	0.016	0.009	0.014	0.011	0.042	0.038		
6-DV09	0.016	0.011	0.015	0.012	0.039	0.042		
7-DV10	0.021	0.047	0.009	0.033	0.046	0.036		
8-DV11	0.028	0.029	0.038	0.029	0.036	0.044		
9-DV12	0.048	0.021	0.037	0.075	0.048	0.036		
10-DV13	0.048	0.047	0.042	0.053	0.038	0.036		
11-DV15	0.038	0.022	0.056	0.049	0.050	0.043		
12-DV16	0.009	0.015	0.012	0.019	0.034	0.033		
13-DV17	0.020	0.021	0.040	0.023	0.044	0.038		
14-DV18	0.021	0.018	0.018	0.036	0.042	0.043		
15-FM01	0.013	0.012	0.015	0.012	0.040	0.039		

BANDPASS RMS MEDIAN VALUE = 0.030  
 USE SIMPLE FREQUENCY SMOOTHING

RMS OUTLIERS >3.0 SIGMA

SPW	Xpol		Ypol		OUTLIERS
	mean	rms	mean	rms	
0	0.0216	0.0116	0.0211	0.0122	
1	0.0219	0.0115	0.0237	0.0105	No Outliers
2	0.0257	0.0140	0.0325	0.0162	No Outliers
3	0.0415	0.0046	0.0386	0.0035	No Outliers

\*\*\*\*\*

SHADOWING OF ANTENNAS

No shadowed antennas

\*\*\*\*\*

Flux Density Determinations

Reference source Titan

Flux densities 3C279 in SpW=0 is: 13.4041 +/- 0.0307553 (SNR = 435.83, N= 9)  
 Flux densities 3C279 in SpW=1 is: 13.6729 +/- 0.0390685 (SNR = 349.973, N= 9)  
 Flux densities 3C279 in SpW=2 is: 13.3959 +/- 0.045008 (SNR = 297.633, N= 9)  
 Flux densities 3C279 in SpW=3 is: 12.7991 +/- 0.0304196 (SNR = 420.751, N= 9)  
 Flux densities J1332+0200 in SpW=0 is: 0.65334 +/- 0.00474161 (SNR = 137.789, N= 9)  
 Flux densities J1332+0200 in SpW=1 is: 0.663193 +/- 0.00402961 (SNR = 164.58, N= 9)  
 Flux densities J1332+0200 in SpW=2 is: 0.650583 +/- 0.00636427 (SNR = 102.224, N= 9)  
 Flux densities J1332+0200 in SpW=3 is: 0.605731 +/- 0.005567 (SNR = 108.807, N= 9)

FLAGGING STATISTICS

Overall -> 0.01

Per spw (over total of dataset):

1 -> 0.00  
 0 -> 0.00  
 3 -> 0.00  
 2 -> 0.01