

# Monitor and Control Software

EVLA Advisory Committee Meeting, March 19-20, 2009



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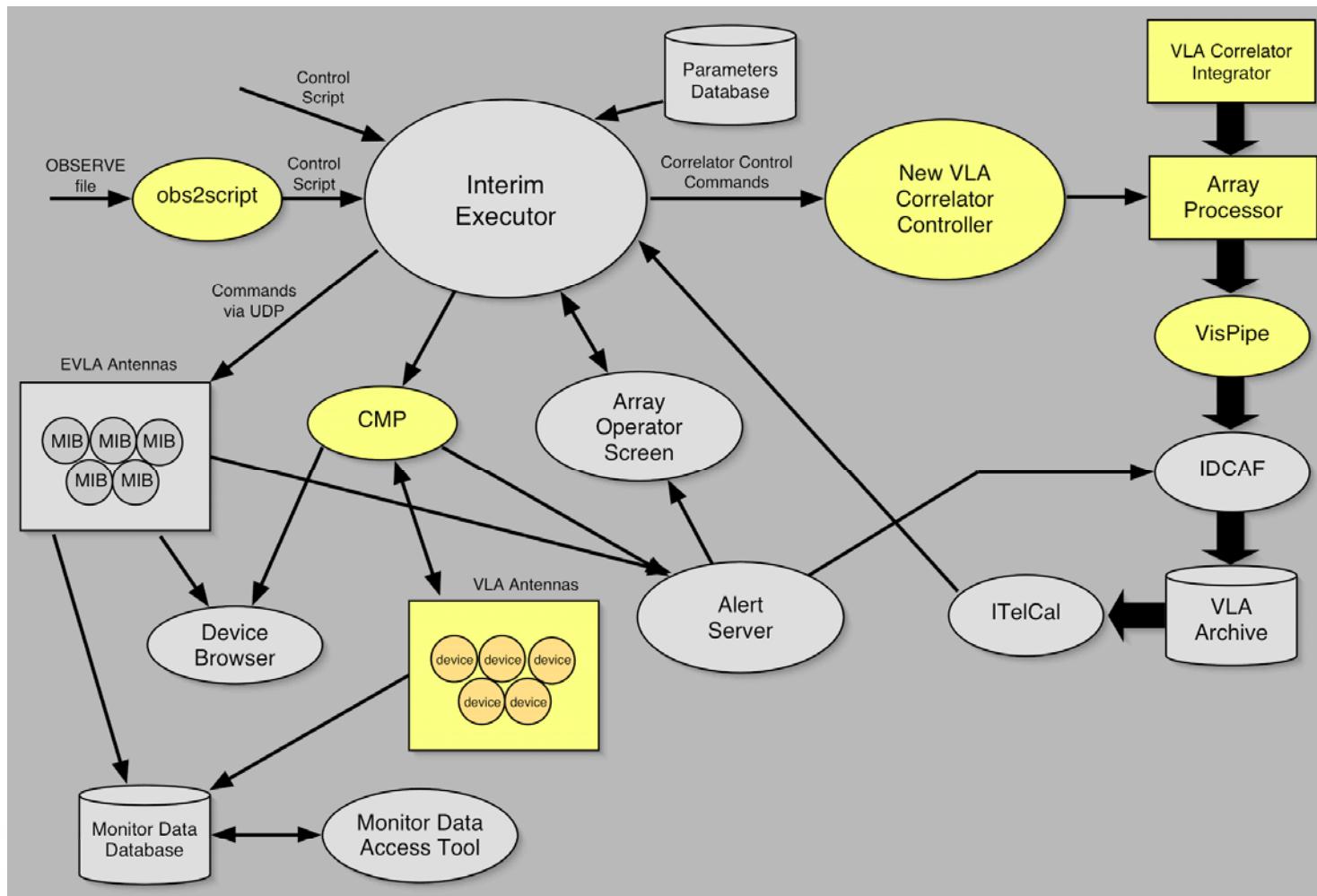
Atacama Large Millimeter/submillimeter Array  
Expanded Very Large Array  
Robert C. Byrd Green Bank Telescope  
Very Long Baseline Array



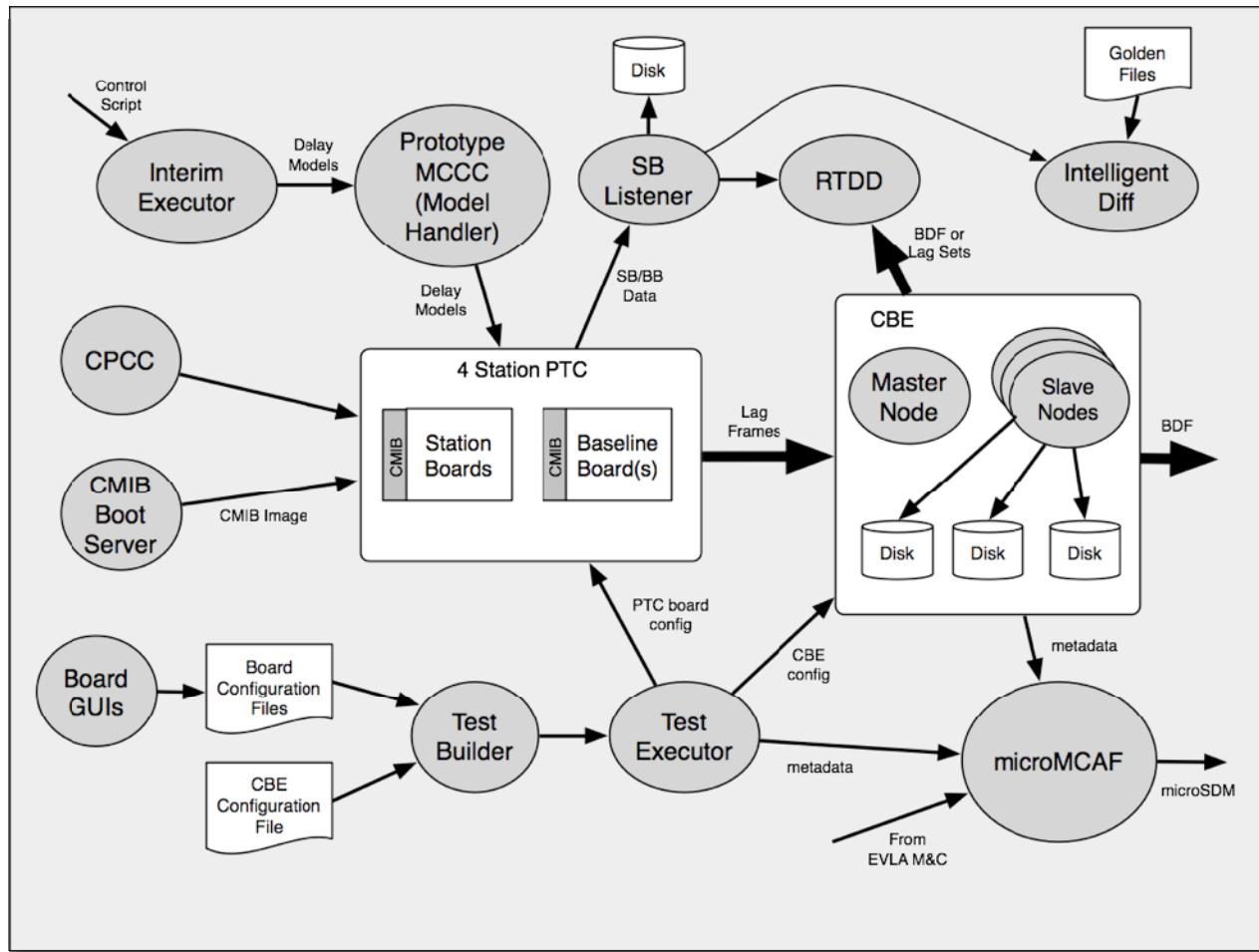
# Major Subsystems

- Executor and parameters database
- Antenna M&C
- Correlator M&C
- Alerts and logging
- Monitor data storage and retrieval
- Metadata capture and format
- Telescope calibration
- Monitoring interfaces
- Archive loading controller
- SDM cataloger

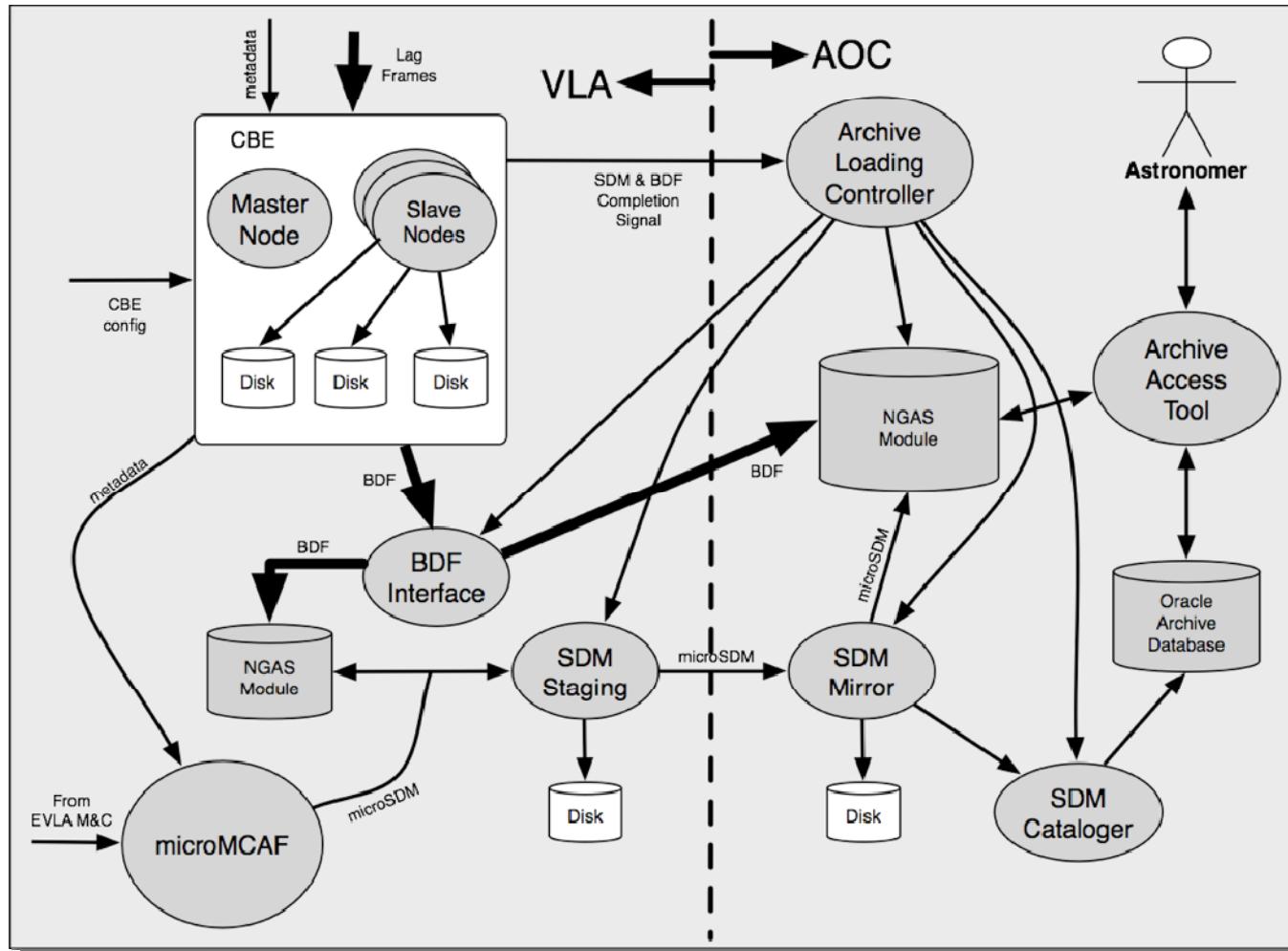
# Transition System



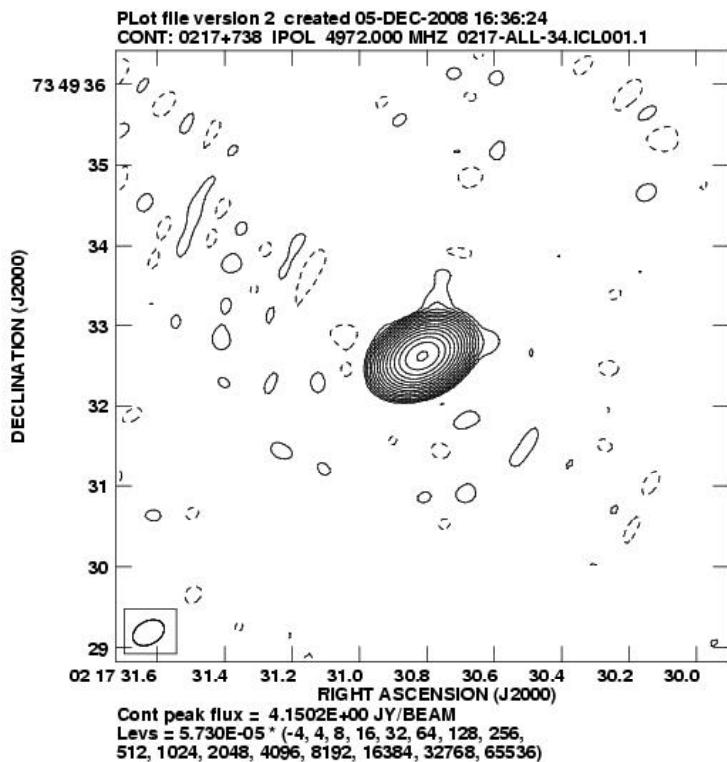
# Prototype Correlator System



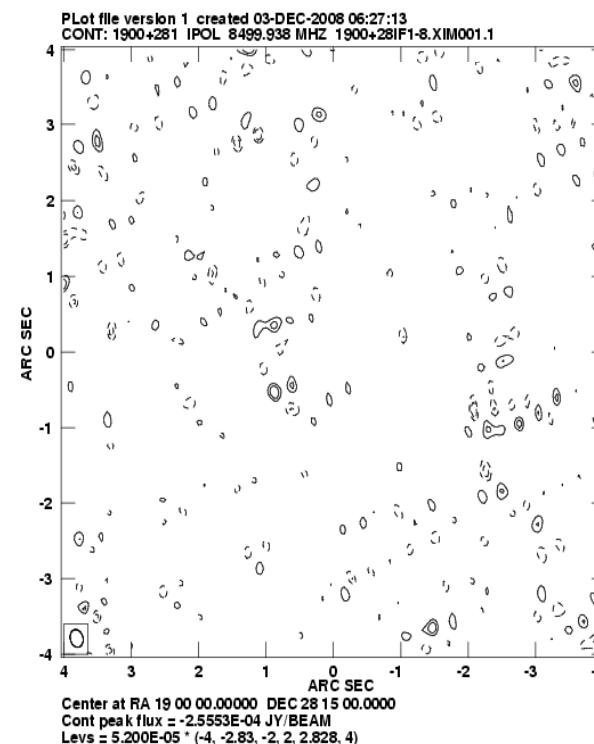
# Archiving System



# PTC Support Success

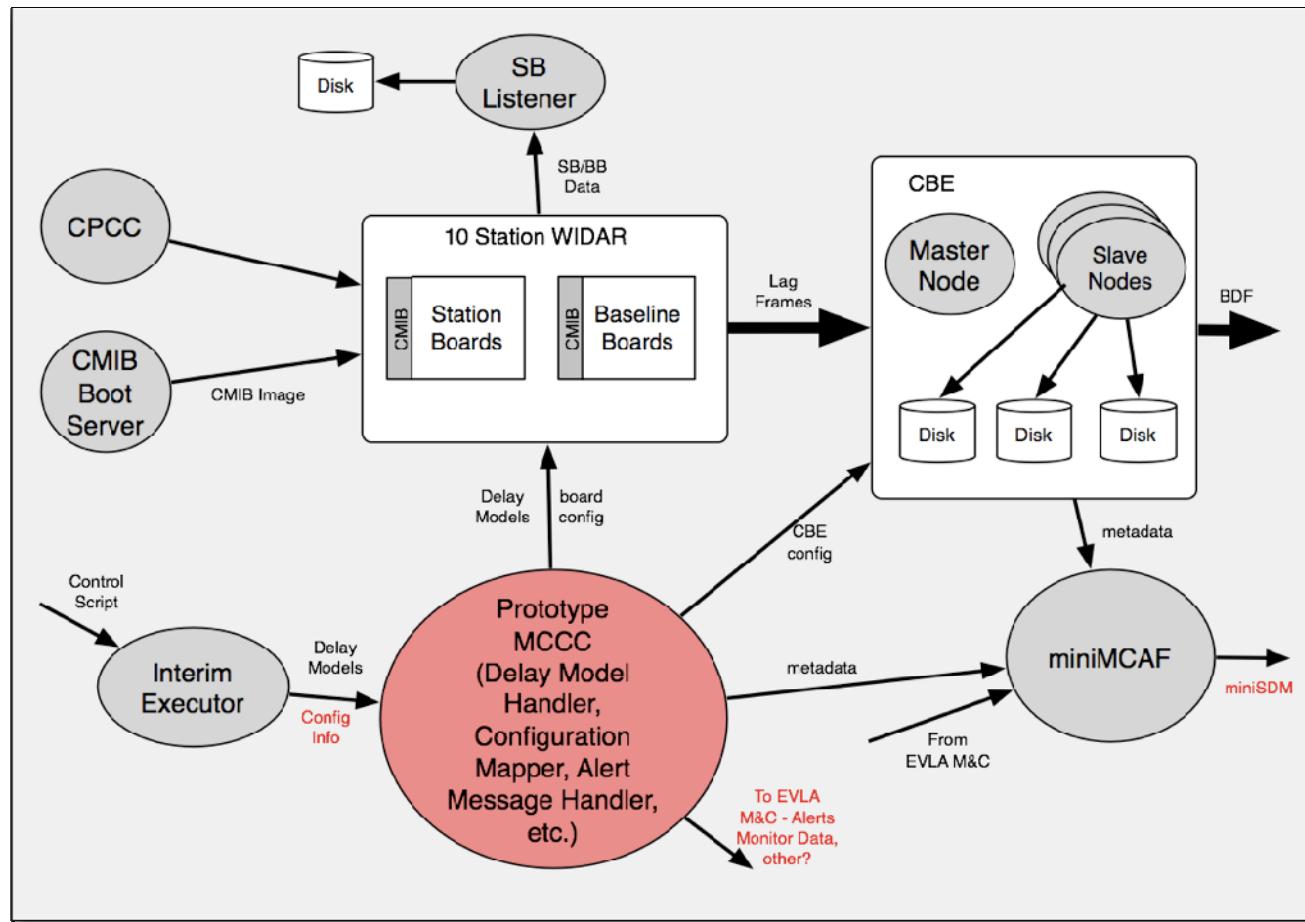


0217+738  
 ~70000:1

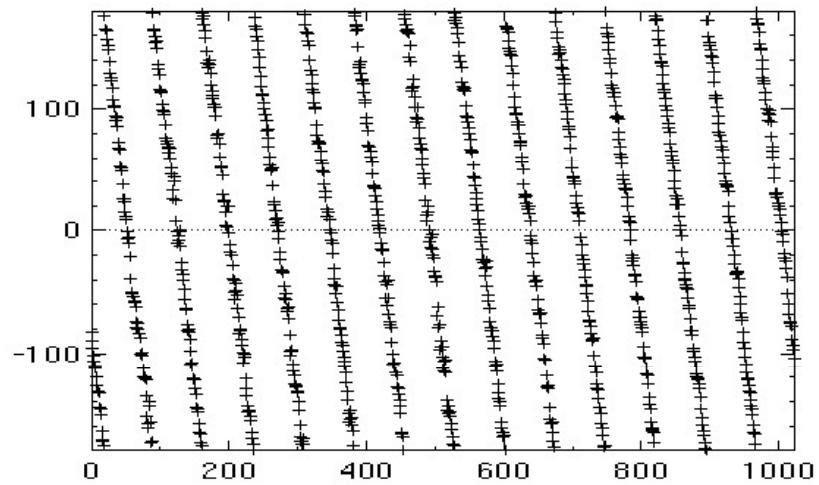
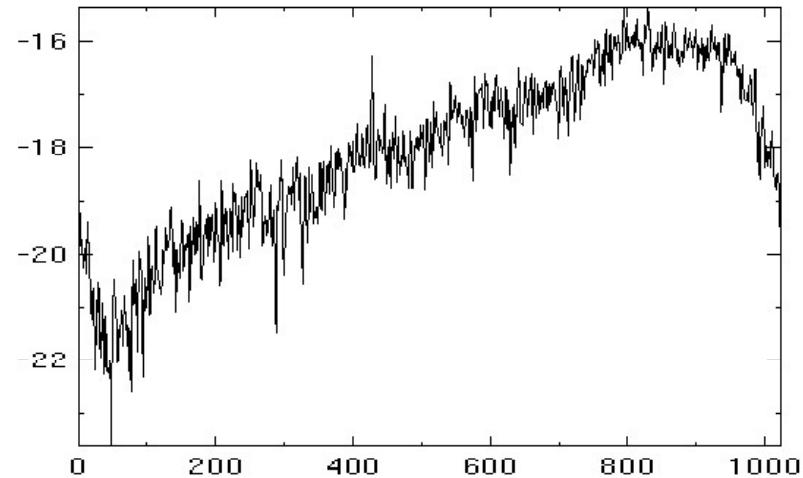


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 field

# WIDAR0 System



# WIDAR0 Support Success



WIDAR0 first fringes

# Transition System Milestones Already Supported

- Support for EVLA antenna hardware development
  - Use of EVLA antennas in scientific observing
  - Replacement of Modcomp-based VLA control system
  - Support of prototype WIDAR testing (both PTC and WIDAR0)
-

# Data Rates and Volumes

Driver	Target Date	% time	Max rate (Mby/s)	Mean rate (Mby/s)	Volume (Tby/yr)
Now		100	.06	.02	0.5
PTC	Aug08	small	8	n/a	n/a
WIDAR0	Mar09	small	20	0.1	4
256 MHz bandwidth; 1024 channels max; 1 sec min dump (OSRO)	Mar10	90	.23	0.08	2
2 GHz bandwidth; 8096 channels max; .1 sec min dump (RSRO)	Mar10	10	2	0.6	2
8 GHz bandwidth; 32384 channels max; .1 sec min dump; only ~10 antennas with 3-bit samplers (RSRO)	Jun10	10	16	5	16
8 GHz bandwidth; 1048576 channels max; .1 sec min dump (RSRO)	Oct10	10	75	20	60
2 GHz bandwidth; 8096 channels max; .1 sec min dump (OSRO)	Jun11	90	2	0.6	20
8 GHz bandwidth; 1048576 channels max; .1 sec min dump (End of construction)	Jan13	100	75	20	600

Early testing indicates we should have no trouble supporting these data rates

# Operator Interface Demo

**Operator Screen V3 (v1.5.6)**

**SCRIPTS/SUBARRAYS**

Active	
628AB1314	[628AB1314-00...]

**Queued**

History	
AH980.G.B.B	dynamic-069.e...
628AF479	628AF479-00...
sysstartx_004	Xsysstart.evla
KAW3OH	KAW3OH.evla
sysstartx_003	Xsysstart.evla
627AB1314	627AB1314-0...

**OBSERVATION DATA**

Subarray 628AB1314	
Source	01480-02360
RA	Dec
01:48:00.000	-02:35:60.000
Band	1.5GHz
Corr Mode	Observe Mode
Tuned Sky Frequency	
IF A/C	1452.399999
IF B/D	1372.600000

**ANTENNAS**

ea19	dcs04 374.22 52.44	va12	dcs24 374.22 52.49	ea11	dcs17 374.21 52.54
[628AB1314]	W4 374.22 52.44	N4 374.31 52.48	[628AB1314]	E4 374.22 52.54	
va06	dcs07 374.16 52.49	ea28	dcs30 374.17 52.53	ea10	dcs20 374.24 52.45
[628AB1314]	W8 374.25 52.47	[628AB1314]	N8 374.17 52.53	[628AB1314]	E8 374.33 52.44
ea17	dcs06 374.19 52.45	ea18	dcs31 373.76 52.43	ea05	dcs13 374.34 52.46
[628AB1314]	W12 374.20 52.45	[628AB1314]	N16 373.76 52.43	[628AB1314]	E12 374.34 52.46
ea01	dcs03 374.70 52.43	ea26	dcs26 374.07 52.57	ea03	dcs14 374.11 52.56
[628AB1314]	W16 374.70 52.43	[628AB1314]	N20 374.07 52.57	[628AB1314]	E16 374.11 52.56
ea16	dcs02 373.84 52.56	ea25	dcs27 374.11 52.47	ea02	dcs15 373.98 52.23
[628AB1314]	W20 373.84 52.56	[628AB1314]	N24 374.11 52.47	[628AB1314]	E20 373.98 52.23
ea15	dcs05 374.18 52.51	ea13	dcs25 373.87 52.56	ea09	dcs12 374.24 53.54
[628AB1314]	W24 374.18 52.51	[628AB1314]	N28 373.87 52.56	[628AB1314]	E24 374.24 53.54
ea04	dcs11 374.20 52.49	va20	dcs23 374.00 52.43	ea14	dcs16 375.68 52.45
[628AB1314]	W28 374.20 52.49	[628AB1314]	N32 374.09 52.41	[628AB1314]	E28 375.68 52.45
ea24	dcs01 374.26 52.49	va07	dcs32 375.08 52.37	ea21	dcs22 374.22 51.98
[628AB1314]	W32 374.26 52.49	[628AB1314]	N36 375.17 52.36	[628AB1314]	E32 374.22 51.98
va22	dcs10 374.10 52.47	ea23	dcs21 374.18 52.59	ea20	dcs19 374.18 52.59
[628AB1314]	W36 374.19 52.46	[628AB1314]	E36 374.18 52.59	[628AB1314]	E20 374.18 52.59
ea08	dcs35				

**CONSOLE**

```

628AB1314 54906 215446 obs2script: start time=21:57:56.0
628AB1314 54906 215446 obs2script: setting up source 01570+04464 at 1.5GHz [source #130]
628AB1314 54906 215146 obs2script: start time=21:54:46.0
628AB1314 54906 215146 obs2script: setting up source 01480-02360 at 1.5GHz [source #129]
628AB1314 54906 214826 obs2script: start time=21:51:46.0
628AB1314 54906 214826 obs2script: setting up source 01510-03281 at 1.5GHz [source #128]
628AB1314 54906 214636 obs2script: start time=21:48:26.0
628AB1314 54906 214636 obs2script: setting up source 01495-03412 at 1.5GHz [source #127]
628AB1314 54906 214336 obs2script: start time=21:46:36.0
628AB1314 54906 214336 obs2script: setting up source 0149+059 at 1.5GHz [source #126]
628AB1314 54906 214036 obs2script: start time=21:43:36.0
628AB1314 54906 214036 obs2script: setting up source 01480-03281 at 1.5GHz [source #125]
628AB1314 54906 214036 obs2script: start time=21:40:26.0

```