# ALMA WebLog Review

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In the context of ALMA, QA stands for quality assurance. ALMA has four phases of quality assurance:

- QA0 Simple quality checks performed at the observatory as soon as the data are acquired
- QA1 Long-term monitoring of the performance of the observatory (not specific to any project)
- QA2 A complete quality assessment performed on the data after completely calibrating and imaging the data
- QA3 Re-assessment of data after they are delivered to users triggered when someone discovers a previously-unidentified problem

In data downloaded from the archive, the qa directory contains the reports produced from the QA0 and QA2 processes. These files can be very useful for understanding the data.

Data from older cycles will have been manually-calibrated. The quality assurance data from these cycles will consist of the following:

- QA0 report (\*.qa0\_report.pdf)
- QA2 report (\*.qa2\_report.pdf)
- QA2 diagnostic files (\*.png and \*textfile.txt)

Data from more recent cycles will have been partially or completely pipeline processed and include the following files:

- QA0 report (\*.qa0\_report.pdf)
- QA2 report (\*.qa2\_report.pdf)
- WebLog (\*.weblog.tgz)

The QA0 PDF provides a summary of comments from the astronomer who acquired the data. Each Execution Block (EB) will have its own report.

Versions of this document from earlier cycles contain just some simple diagnostic plots.

Versions from recent cycles contain several new sets of diagnostic plots as well as preview images.

These documents are most useful for understanding whether any problems were encountered during the observations. QA0 Report

Project Code	2021.1.00499.S	SchedBlock	PJ113921_a_03_TM2									
ExecBlock	uid://A002/Xf396d6/X45bb	ExecBlock Status	SUCCESS									
QA0 Status	Pass	Exec. Fraction	1.50									
Repr. frequency	89.631 GHz (Sky)	Band	ALMA_RB_03									
Array	12 [m]	Baselines	15m 2617m									
Antennas	Antennas: 46 effective, 46 usable, 46 u acceptable: 41 Band observed: 3. Highest recommend	Antennas: 46 effective, 46 usable, 46 unflagged, 46 total. Expected for Cycle 9 : 43, minimum acceptable: 41 Band observed: 3. Highest recommended: 4-4										
Weather	PWV 4.15 mm; Wind 3.50 m/s; Humidil Phase rms: 193.366 microns	PWV 4.15 mm; Wind 3.50 m/s; Humidity 21.51 %; Pressure 493.55 hPa; Phase rms: 193.366 microns										
QA0 comment	No issues found in the data, except high Tra	k/Tsys on DA52.										
AOS Check comment	2021-12-04T12-2147 uid://A002/X1936G3 Mean Zenth PWY: 415 +/- 0.08 mm Rep 46/46 antennas are working in band 3 on 1 PHASEC41: Antenna-based phase rms on No antennas exceed rms limit BANDPASS: WVR-corrected baseline-base baselines Mean improvement in phase rms using W Baseline limit with good phase (80%): 131 Bandpass calibrator: J1058+0133 Flux: 41. Phase calibrator: J1058+0133 Flux: 41. Phase calibrator: J1058+0133 Flux: 41. Phase calibrator: J1058+0133 Flux: 42. Phase calibrator: J1058+0133 Flux: 42. Pracentage of all cal data to be flagged: 5 Band observed: 3 HIGHEST RECOMMEN QA0 PASS	X45bb Band 3 Freq 89 tresentative Tsys: 65.4 k the BLC phaseCal: 20.8 degrees d phase rms on bandpar (Ks: 2.94 9m. L80 resolution: 0.5 9m. L80 resolution: 0.5 10 +/- 0.112 Jy Possib -/- 0.004 Jy Sky separ antennas: 148.0 Bet J bandpass Scan 0.00% Binary size: NDED OBSERVING BAND	6314199553 GHz standard observation (193.4 microns) is: 11.8 degrees (109.4 microns) on 1000m 23 arcsec is channels with SNR>30: 3659 etchanels with SNR>30: 3659 etchanels with SNR>30: 3659 4.77GB : 4 - 4									
OA0 warnings	Percentage of calibration data flagged	0 500 %										

Achieved angular resolution is outside the expected range. Observed: 0.38, requested: 0.57 - 0.85

The QA0+ section shows some very quick (but very rough) images produced from the data soon after the observations were performed as well as some measurements from those images.

While these images and data are useful for providing a preliminary view of the results, they may be inaccurate compared to what is in the WebLogs. QA0+ EB

QAO+ results are only to be used as a guide to assess the data quality, and are not for scientific use. QAO+ image and fluxes are obtained from an online reduction of the combined wideband continuum spectral windows (using mfs TCLEAN in CASA), with no bandpass or Tsys calibration, nor removal of potential line contamination. Fluxes are only approximate. 'QAO+ EB' is the result from only the current EB. 'QAO+ concat' is the result from concatenating all EBs

Science target	PJ113921.7	,			
Peak	0.055	Integrated	0.05	RMS	0.003
Xoff	0.569	Yoff	0.218	(arcsec from	phase centre)
Beam X	0.603"	Beam Y	0.382"	Beam PA	-17.66°
Selfcal	true				
Peak	0.107 mJy	Integrated	0.192 mJy	RMS	0.004 mJy
Xoff	0.007	Yoff	0.004	(arcsec from	phase centre)
Phase Cal	J1148+1840	) Separation	2.80°		
Peak	28.255 mJy	Integrated	29.343 mJy	RMS	0.217 mJy
Beam X R=0.5	0.563"		Beam Y R=0	0.5	0.376"
Beam PA R=0.5	-17.28°		RMS R=0.5		0.217 mJy
Beam X R=2.0	0.805"		Beam Y R=2	2.0	0.56"
Beam PA R=2.0	-27.01°		RMS R=2.0		0.316 mJy
Beam X R=-0.5	0.428"		Beam Y R=-	0.5	0.287"
Beam PA R=-0.5	-13.38°		RMS R=-0.5		0.166 mJy
WVR		Try remcloud	false	PhaseCal RMS	18.208
Bandpass			Bandpass F	RMS Top	10.598
Bandpass RMS	[5.53, 7.5	7, 10.8, 10.73]°	Bandpass Timescales	[20.0, 40	.0, 80.0, 120.0] seconds

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The QA0+ section shows some very quick (but very rough) images produced from the data soon after the observations were performed as well as some measurements from those images.

While these images and data are useful for providing a preliminary view of the results, they may be inaccurate compared to what is in the WebLogs. Phase Cal (left)



Target images





The QA0+ EB section contains the images created using just one Execution Block (EB).

The QA0+ concat section contains images based on combining the data from this EB with previouslyexecuted EBs (if they exist).

N EBs			QA0+ concat		
N EBs					
	1 1	ExecBlock UIDs	[]		
Beam X R=0.5	0.829"		в	eam Y R=0.5	0.76"
Beam PA R=0.5	16.24°		R	MS R=0.5	0.003 mJy
Beam X R=2.0	1.254"		B	eam Y R=2.0	1.131"
Beam PA R=2.0	am PA R=2.0 -26.32°		R	MS R=2.0	0.003 mJy
Beam X R=-0.5	0.593"		в	eam Y R=-0.5	0.407"
Beam PA R=-0.5	4.93°		R	MS R=-0.5	0.005 mJy
Science target	PJ113921.7	RA	11:39:21.	745 Dec	+020:24:50.9136
Xoff	-0.044	Yoff	-0.014	Offset (fra beam)	ction of 0.058
Peak	0.117 mJy	Integrated	0.253 mJy	RMS	0.003 mJy

Concatenated target image





The QA2 PDF includes some comments on the data processing and summary information about the observations.

The last few pages of the document include standard instructions sent to all users.

The first part of the section under "Final QA2 comment" may be useful to read in case something went wrong with the observations.

	QA2 Report
	Project information
Name Code Pl Organization Co-ls	Probing Gas, Dust, Stars, and Star Formation Activity down to 100-pc Scales using Strong Gravitational Lensing 2021.1.00499.5 Patrick Kamieneski Department of Astronomy, Massachusetts at Amherst, University of O. Cooper, B. Frye, K. Harrington, J. Lowenthal, A. Vishwas, Q. Wang, M. Yun
	ObsUnitSet information
Name QA2 Status	Member OUS (PJ113921.7) Pass
Member OUS Status ID SchedBlock name SchedBlock UID Array Mode Band Repr.Freq. (sky) Spectral setup Sources Other SP. in this Group	uid://A001/X158f/X7a1 PJ113921_a_03_TM2 uid:/A001/X158f/X782 TM2 Standard ALMA_R8_03 89.63 [GH2] Mixed PJ113921.7
OUS (Member OUS Status ID in brackets):	PJ113921_a_03_TM1 (uid://A001/X158f/X79f)
Execution count	
Comments from Reducer	Final QA2 comment
CASA version: 6.2.1.7, Pipe	line version 2021.2.0.128
Reduction mode: PL calibrat	tion and imaging
Calibration issues: None	
Imaging issues: None	
General info:	
This dataset has been check and how the renormalization https://help.almascience.org	ked for the so-called "renormalization issue". A detailed description about this issue, process is carried out, can be found at the following link: /kb/articles/what-are-the-amplitude-calibration-issues-caused-by-alma-s-normalization-strategy
The requirement of rescaling peak rescaling value has be as displayed in the table in thi increase of the line flux, whit This is not an increase in flu absolute flux accuracy, which is 5% in Bands 3, 4 & negligible. Since the rescaling factor is	g due to any astronomical lines detected in this dataset has been evaluated and the largest en estimated to be 1.002, he hifa_renorm task of the delivered weblog. The effect of rescaling is a channel-dependent ch is largest in the brightest channels. x-scale uncertainty, but a flux offset correction. When comparing such an offset to the nominal 5 and increasing to 20% in Bands 9 & 10, it is concluded that offsets up to 2% are considered below this threshold, this dataset has not been corrected for the above issue.
It is recommended that the F images on the cube imaging	PI carefully assess the results on the hif_findcont weblog page, and in the "line-free moment 0" weblog page.

Self-calibration was not performed.

This is a line project, thus QA2 was performed on the Aggregate Continuum and the PI specified representative spectral window.

The RMS and beam size meet the PI requested performance parameters, therefore, this scheduling block has been deemed a QA2 PASS.

Aggregate Continuum -Image name: uid\_\_\_A001\_X158f\_X7a1.s36\_0.\_PJ113921.7\_\_sci.spw17\_21\_23\_25.cont.l.iter1.image.tt0 The WebLog contains most of the useful diagnostic information from the QA2 process.

This is produced by the ALMA pipeline as the data are being calibrated and imaged.

The calibration part of the pipeline will calibrate the following in the visibility data:

- Phase versus frequency
- Amplitude versus frequency
- Phase versus time
- Amplitude versus time

The imaging pipeline produces the following:

- Image cubes
- Continuum flux images for each spw
- Aggregate continuum image for all spws

The WebLog is typically distributed as a set of html files in a tgz file that needs to be uncompressed before the files can be viewed.

When the files are unpacked, they will all be in a directory beginning with pipeline. The WebLogs files will be within a sudirectory starting with html.

Most web browsers may not open the WebLogs correctly because of issues with their security settings.

The current recommendation is to use the following steps to open a WebLog:

- 1. In a terminal, go to the pipeline\*/html directory with the WebLog.
- 2. / Start CASA in pipeline mode using the --pipeline option.
- 3. At the CASA prompt, type h\_weblog().
- 4. Copy the url printed by this command into the address bar of a web browser.

The main index (or Home) page provides an overview of the observations. The page has three tabs at the top. The Home tab is currently displayed. Clicking on a measurement set in the bottom table leads to a page with more detailed information about those data.

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	Home By Topic By Task										20	21.1.0049	9.S
Ob	oservation Overview					Pipeline Summary							
Proj	ect	uid://A001/X15	25/X705			Pipeline Version	2021.2.0.128 (documentation)						
Prin	Principal Investigator pkamieneski			CASA Version	6.2.1.7 (environment)								
OUS Status Entity id uid://A001/X158//X7a1			IERSeop2000 Version	0001.0153 (last date: 2021-10-10 00:00:00)									
Observation Start 2021-12-04 12:23:08 UTC					IERSpredict Version	0623.0662 (last date: 2022-03-04 00:00:00)							
Observation End 2021-12-04 13:23:12 UTC				Pipeline Start	2021-12-06 15:32:10 UTC								
						Execution Duration	5:54:43						
Ob	oservation Summary												
				Time (UTC)					Baseline L	ength			
Mea	asurement Set	Receivers	Num Antennas	Start	End			On Target	Min	Max	RMS	Size	
Obs	erving Unit Set Status: uid://A001/X158f/X7	7a1 Scheduling Block ID: uid://A	001/X158f/X782 Scheduli	ng Block Name: PJ113921_a_0	13_TM2								
Ses	sion: session_1												
uid_	_A002_Xf396d6_X45bb.ms	ALMA Band 3	46	2021-12-04 12:23:08	1-12-04 12:23:08         2021-12-04 13:23:12         0:41:25         15.3 m           MS dates not fully covered by IERSeop2000. CASA will use IERSpredict.         0:41:25         15.3 m				2.6 km	749.4 m	13.2 GE	3	

2021-12-04 13:22:31

MS dates not fully covered by IERSeop2000. CASA will use IERSpredict.

0.41.50

15.3 m 2.6 km

749.4 m

6.5 GB

uid\_\_\_A002\_Xf396d6\_X45bb\_target.ms

ALMA Band 3

46

2021-12-04 12:32:20

## The overview page lists a lot of basic information about the observations themselves.

😆 2021.1.00499.S - Session Data Details × +				~ - 0 ×			
$\leftarrow \rightarrow$ C $\textcircled{a}$ $\square$ file://	//D:/pipeline/html/t2-1.html?sidebar=sidebar_uidA002_Xf396d6_	X45bb_ms&subpage=t2-1_details.html		☆ ① 約 =			
Home By Topic By Task				2021.1.00499.S			
Session: session_1           uidA002_XI396d6_X45bb.ms           uidA002_XI396d6_X45bb_target.ms	Overview of 'uidA002_2	Xf396d6_X45bb.ms'					
	Observation Execution Time	2021-12-04 12:23:08					
	End Time	2021-12-04 13:23:12		° 1			
	Total Time on Science Target	0:55:15 0:41:25	Intent vs Time Track scan intent vs time	Field vs Time Track observed field vs time			
	Spatial Setup		Spectral Setup				
	Science Targets 'PJ113921.7'		All Bands 'ALMA Band	VIA Band 3' and 'WVR'			
	Calibrators U1058+0133, U1148+1840 a	and 'J1150+2417'	Science Bands 'ALMA Band 3' Sky Setup				
	Min Baseline	15.3 m	Min Elevation	36.99 degrees			
	Max Baseline	2.6 km	Max Elevation	54.03 degrees			
	Number of Baselines	1035					
	Number of Antennas	46					
	Antenna Diameters	46 of 12 m					

#### Weather

#### uid\_A002\_Xf396d6\_X45bb.ms Meteo129 Meteo130

PWV

The listobs output button displays a text file with summary information about the sequence of observations, the fields, the spectral windows, and the antennas. Versions of this file can also be created using the listobs command in CASA.

😆 2021.1.00499.S - Session Data Details ×	+ ~ ~ ~	o ×
$\leftarrow$ $\rightarrow$ C $\textcircled{a}$	🗋 file:///D:/pipeline/html/t2-1.html?sidebar=sidebar_uidA002_Xf396d6_X45bb_ms&subpage=listobs.txt	⊡ එ =
A Home By Topic By	Task 202	21.1.00499.S
Session: session 1		
uid A002 ¥f396d6 ¥45bb ms		
	listobs txt	BACK
uidA002_Xf396d6_X45bb_target.ms		
	MeasurementSet Name: /mmt/jaosco/data/pipeproc/dataproc/2211.100499.5_2021_12_06T14_48_15.733/50U5_uidA001_X158f_X79d/GOU5_uidA001_X158f_X79d/HOU5_uidA001_X158f_X731/WOFKing/uidA002_X139d65_X45bb.ms M5 Version 2	
	Observer: pramieneski Project: uld://A001/X1525/X705	
	Ubstratum: HLVM	
	ObservationID = 0 ArrayID = 0	
	Date Timerange (UTC) Scan FldId FieldHame nRows SpwIds Average Interval(s) ScanIntent	
	04-Dec-2021/12:23:08.2 - 12:24:06.3 1 0 J1058-0133 724730 [0,1,2,3,4,5,6,7,8,9,10,11,12] [0.016, 0.016, 0.016, 0.016, 0.016, 1.15, 2.02, 1.01, 2.02, 1.01, 2.02, 1.01] [CALIBRATE_NOMEON_SOURCE,CALIBRATE_WARHOUT	N_SOURCE]
	12:24:18.4 - 12:24:34.9 2 0 11050+0133 321218 [4,13,14,15,16,17,18,19,20,21,22,23,24] [1.15, 0.016, 0.016, 0.016, 0.0576, 0.576, 0.576, 0.576, 0.576, 0.576, 0.576, 0.576, 0.576] [CALIBRATE_ATMOSPHERE#AWBIEN	T,CALIBRA
	TE_ATMOSPHERE#HOT,CALIBRATE_MTMOSPHERE#OFF_SOURCE,CALIBRATE_W/R#HOTELT,CALIBRATE_W/R#HOTF_SOURCE]	
	12:24:47.2 - 12:29:50.4 3 0 J1050-0133 5003088 [4,13,14,15,16,17,18,21,22,23,24,25,26] [1.15, 0.016, 0.016, 0.016, 0.016, 0.016, 0.016, 0.01, 0.05, 1.01, 6.05, 1.01] [CALIBRATE_BANDPASS#ON_SOURCE,CALIBR	ATE_FLUX#
	ON_SOURCE,CALIBRATE_WARKON_SOURCE]	
	12:39:10.9 - 12:31:00.2 4 1)1150-2417 724634 [0,1,2,3,4,5,6,7,8,9,10,11,12] [0.016, 0.016, 0.016, 0.016, 1.15, 2.02, 1.01, 2.02, 1.01, 2.02, 1.01] [CALIBRATE_DUNTINGKON_SOURCE,CALIBRATE_WWRKON_SOURC	N_SOURCE]
	12:31:17.8 - 12:31:49.0 5 2 J1148-1840 500932 [4,13,14,15,16,17,18,21,22,23,24,25,26] [1.15, 0.016,	WVR#ON_S
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	TE ATMOSPHERENT, CALTERET FURNISHER CAREFE CAREFE CAREFE WARMSTERT LATERET WARMSTERT MARKET WARKE CAREFE	T) CALLENA
	12:22:28.0 - 12:27:23.1 7 3 P113921.7 5003008 [4,13,14,15,16,17,18,21,22,23,24,25,26] [1.15, 0.016, 0.016, 0.016, 0.016, 0.016, 0.05, 1.01, 6.05, 1.01, 6.05, 1.01] [055ERVE TARGETWON SOURCE]	
	12:37:36.8 - 12:38:07.4 8 2 31148-18400 500256 [4,13,14,15,16,17,18,21,22,23,24,25,26] [1.15, 0.016,	
	OURCE]	
	12:38:17.1 - 12:43:19.9 9 3 P3113921.7 5003052 [4,13,14,15,16,17,18,21,22,23,24,25,26] [1.15, 0.016,	
	12:43:35:0 - 12:44:85.4 10 2 31148-1840 500256 [4,13,14,15,16,17,18,21,22,23,24,25,26] [1.15, 0.016, 0.016, 0.016, 0.016, 0.016, 0.05, 1.01, 6.05, 1.01, 6.05, 1.01] [CALIBRATE_PHASEHOU_SOURCE,CALIBRATE	_WVR#ON_S
	ousce]	
	12:44:15.4 - 12:44:34.1 11 3 P113921.7 321172 [4,13,14,15,6,17,18,19,20,21,22,23,24] [1.15, 0.016, 0.016, 0.016, 0.0576, 0.576,	T,CALIBRA
	TE_ATHOSPHEREHOT,CALIBRATE_INVERSEDF_SOURCE_CALIBRATE_WARAPELENT,CALIBRATE_WARAPEF_SOURCE_	
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	ORCEL 000000 11 11:00:200 12 1 21:00:0000 200000 200000 200000 2000000	
	12:59:35.5 - 12:55:38.7 14 3 P1113921.7 5003098 [4,13,14,15,16,17,18,21,22,23,24,25,26] [1.15, 0.016, 0.016, 0.016, 0.016, 0.016, 6.05, 1.01, 6.05, 1.01, 6.05, 1.01] [085ERVE_TARGETWON_SOURCE]	
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	OURCE]	
	12:56:33.8 - 12:56:58.1 16 3 P3113921.7 321172 [4,13,14,15,16,17,18,19,28,21,22,23,24] [1.15, 0.016, 0.016, 0.016, 0.0576, 0.576, 0.576, 0.576, 0.576, 0.576, 0.576, 0.576] [CALIBRATE_ATMOSPHEREMANDIEN	T,CALIBRA
	TE_ATMOSPHERE#HOT,CALIBRATE_ATMOSPHERE#OFF_SOURCE,CALIBRATE_W/R#HOTFLATE_W/R#HOTF_SOURCE]	
	12:56:58.0 - 13:02:01.1 17 3 P3113921.7 5003098 [4,13,14,15,16,17,18,21,22,23,24,25,26] [1.15, 0.016, 0.016, 0.016, 0.016, 0.016, 0.05, 1.01, 6.05, 1.01, 6.05, 1.01] [085ERVE_TARGETHON_SOURCE]	
	13:02:14.8 - 13:02:45.5 18 2 J1149-1840 500256 [4,13,14,15,16,17,18,21,22,23,24,25,26] [1.15, 0.016,	_WVR#ON_S
	oukce]	
	12:02:55.1 - 13:07:57.9 19 3 P3113091.7 5003060 [4.13.14.15.16.17.18.21.22.23.24.25.26] [1.15. 0.016. 0.016. 0.016. 0.016. 6.05. 1.01. 6.05. 1.01. 6.05. 1.01. 6.05. 1.01. 6.05. 1.01.	

The intent versus time plot shows the sequence of the observations as well as the purpose of those observations. Some observations have multiple purposes.

1					State 1					<u> </u>			
٠	2021.1.00499.S - Session Data Details ×	+										$\sim$	- o ×
$\leftarrow$	$\rightarrow$ C $\hat{\Box}$	file:///D:/pipeline/html/t	2-1.html?sidebar=sideba	ar_uidA002_Xf396d6_X4	5bb_ms&subpage=t2-	1_details.html							⊡ එ =
													2021.1.00499.S
Ses	ion: session_1												
uid_	_A002_Xf396d6_X45bb.ms												
uid_	_A002_A000U_A4000_target.hts	POLLEAKAGE	Measuremer	nt set: uidA002_X	f396d6_X45bb.m	ns - Start tir	ne:2021-12-	04T12:23:0	08 End time:	:2021-12-0	4T13:23:12		
		POLANGLE -										 1_1_1_1_	
		POLARIZATION -	1 3	4 5 8	10	13	15	18	20	23	25 28		
		WVR -					_			_			
		SIDEBAND -	1	4								 the the	
		POINTING	2	6	11		16		21		26		
1		ATMOSPHERE -	3									 vs time	
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		CHECK -		5 8	10	13	15	18	20	23	25 28		
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		REFERENCE		7 9	12	14	17	19	22	24	27		
		SCIENCE -											
			12h23m	12h38m		12h53m		1340	BW		13h23m		
						Time	2						
											ns (81)		

The field versus time plot is similar except that the y-axis indicates the field ID. In this case, 0 is field for the bandpass calibrator, 1 is the field for the phase calibrator, and 2 is the field for the science target (Z CMa).

								g nink ste
😆 2021.1.00499.S - Session Data Details × +							$\checkmark$	- o ×
	file:///D:/pipeline/html/t2-1.html?sidebar=sidebar_u	iidA002_Xf396d6_X45bb_ms⊂	page=t2-1_details.html				ŝ	⊡ එ ≡
🔒 🔒 Home 🛛 By Topic 🛛 By Task								
Session: session_1								
uidA002_Xf396d6_X45bb.ms								
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	Spatial Setup	2						
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	Antenna Setun							
			i	· · · · ·				
	Min Baseline	12h23m	12h53m	13h08m	13h23m			
	Number of Pasalinas		Time					
	LidA002_X739666_X45bb.ms Meteo129 Met	s130			uid	A002_Xf396d6_X45bb.ms		

The antenna setup page shows the location of the antennas and the resulting uv coverage (which is related to the final angular resolution and maximum recoverable scale of the data).

۲	2021.1.00499.S - Session Data Details×	+						~	- o ×		
$\leftarrow$	ightarrow C (2)	file:///D:/pipeline/html,	/t2-1.html?sidebar=sidebar_uidA0	02_Xf396d6_X45bb_ms&subp	age=t2-2-3.html			\$	⊡ பீ ≡		
 J.MA	🕈 Horne By Topic By T	āsk							2021.1.00499.S		
Sessie uid uid	on: session_1 _A002_X7396d6_X45bb ms _A002_X7396d6_X45bb_target.ms	Anten	Antenna Setup Details								
		Antennas	Baselines								
		Antenna	Positions		UV coverage						
			Actiones Pusitions for uidA002_20195665 -000	AKBA ms mm any Jos							
		Antenna	a Position		Antenna Position		UV Coverage	JV Coverage			
		Plot anten	na latitude vs antenna longitude		Polar-logarithmic plot of antenna positions.		UV coverage plot for TAF	RGET field "PJ113921.7" (#3), spw 25.			
		Antenna E	Details								
						Offset from Array Centre					
		ID	Name	Pad	Diameter	Longitude		Latitude			
		0	0 DA41 A073		12.0	-147.1 m		-705.3 m			
		1	DA42	A047	12.0	38.5 m		-775.2 m			
		2	DA43	A035	12.0	32.0 m		-706.8 m			
		3	DA45	A104	12.0	-530.9 m	-492.5 m				

12.0

12.0

12.0

37.5 m

-78.0 m

-347.1 m

-614.6 m

-882.7 m

-322.8 m

A016

A076

A096

DA46

DA48

DA49

The sky setup shows the elevation and azimuth of the fields during the observations. The beam for sources observed at low elevations (<45°) could appear elongated. Calibration problems may occur if the phase calibrator and science target are too far apart (>10°).



The By Topic page lists warnings that were produced by the pipeline along with grades for those warnings and tables showing the amount of data flagged for each antenna in each field. This page is more important for reviewing the quality of the data.

	2021.1.00499.S - Top	c Summary	×	+		$\sim$	-	o ×			
$\leftarrow$	ightarrow C $rightarrow$	ඩ file;///D:/pipeline/html/t1-3.html E ක්									
	A Home	By Topic	By Ta	ask			2021.1./	.00499.S			
Warnings and Errors											
Stag	tage Task Type Message										
7	hifa_tsysflag Warning uidA002_X396d6_X45bb.ms - for intent AMPLITUDE (field 0: J1058+0133) and spw 23, the following antennas are fully flagged: DA52										
7	hifa_tsysflag	ysflag Warning uidA002_X1396d6_X45bb.ms - for intent BANDPASS (field 0: J1058+0133) and spw 23, the following antennas are fully flagged: DA52									
7	hifa_tsysflag	Wa	arning	uid	: DA52						
10	hif_lowgainflag	Wa	arning	uidA002_Xf396d6_X45bb.ms - the following antennas are moved to the end of the refant list because they are fully flagged for one or more spws: DA52							
12	hifa_bandpass	lag Wa	arning	uidA002_Xf396d6_X45bb.ms - for intent BANDPASS (field J1058+0133) and spw 17, the following antennas are fully flagged: PM01							
12	hifa_bandpass	lag Wa	arning	uidA002_Xf396d6_X45bb.ms - for intent BANDPASS (field J1058+0133) and spw 21, the following antennas are fully flagged: DV08							
12	hifa_bandpass	lag Wa	arning	uidA002_Xf396d6_X45bb.ms - for intent BANDPASS (field J1058+0133) and spw 25, the following antennas are fully flagged: PM01							
12	hifa_bandpass	lag Wa	arning	uidA002_XI396d6_X45bb.ms - the following antennas are moved to the end of the refant list because they are fully flagged for one or more spws, in one or more fields with intents among BANDPASS: PM01 and DV08							
Tas	ks by Topic										
Торі	Topic Lowest Scoring Task Min Score										

	5	
Data Sets	24. hifa_imageprecheck: ImagePreCheck	Beam within range using non-default robust 0.85
Calibration	13. hifa_bandpass: Phase-up bandpass calibration	0.95
Flagging	7. hifa_tsysflag: Flag Tsys calibration	0.96
Imaging	34. hif_makeimages: Make target per-spw continuum images	(1.00)
Miscellaneous	5. hif_refant: Select reference antennas	(1.00)

### **Flagging Summaries**

uid\_\_\_\_A002\_Xf396d6\_X45bb.ms

Flagsing percentages for Source name. JUSE+0133, Intents: AMPLITUDE, ATMOSPHERE, BANDPASS, POINTING, WVR **spm bA4 bA bA4 bA**  The By Task page lists each of the calibration and imaging steps that were applied in the pipeline. Not all of these steps need to be checked. Many of these have diagnostic information primarily used for quality assessment.

۲	2021.1.00499.S - Task Summaries	×	+		$\sim$	- c	3 ×
$\leftarrow$	ightarrow C (2)		file:///D/pipeline/html/t1-4.html	☆		3	മ ≡
لکی	A Home By Topic	Ву Та	sk			2021.1.00	0499.S
Та	sk Summarie	es					
т	ask		QA Score		Dur	ration	
1	. hifa_importdata: Register me	easurem	ent sets with the pipeline	1.00	0:1	3:08	
2	. hifa_flagdata: ALMA determi	inistic fla	gging and a second s	1.00	0:4	2:48	
3	. hifa_fluxcalflag: Flag spectra	al feature	s in solar system flux calibrators	1.00	0:0	0:03	
4	. hif_rawflagchans: Flag chan	inels in r	aw data	1.00	0:0	4:18	
5	. hif_refant: Select reference a	intennas		1.00	0:0	0:12	
6	. h_tsyscal: Calculate Tsys cali	ibration		1.00	0:0	7:38	
97	. hifa_tsysflag: Flag Tsys calib	oration		0.96	0:0	9:05	
8	. hifa_antpos: Correct for anter	nna posi	ion offsets	1.00	0:0	0:03	
9	. hifa_wvrgcalflag: Calculate a	and flag	WR calibration	1.00	0:1	7:32	
<b>9</b> 1	0. hif_lowgainflag: Flag anten	nas with	low gain	1.00	0:0	5:35	
1	1. hif_setmodels: Set calibrato	or model	risibilities and the second	1.00	0:0	5:50	
<b>9</b> 1	2. hifa_bandpassflag: Phase-u	up bandı	ass calibration and flagging	0.96	0:2	0:04	
1	3. hifa_bandpass: Phase-up ba	andpass	calibration	0.95	0:1	5:21	
1	4. hifa_spwphaseup: Spw pha	ase offse	s calibration	1.00	0:0	0:28	
1	15. hifa_gfluxscaleflag: Phased-up flux scale calibration + flagging						
1	16. hifa_gfluxscale: Transfer fluxscale from amplitude calibrator						
17. hifa_timegaincal: Gain calibration							
18. hifa_targetflag: Target outlier flagging							
1	9. hif_applycal: Apply calibrati	ions fron	context (	1.00	0:3	5:17	

**hifa\_tsysflag**: This step includes plots of the  $T_{sys}$  data (used to correct amplitudes) as a function of frequency. It is useful to check these plots to understand the atmospheric transmission. Spectral features in these data could potentially reappear in the final spectra of the science targets.

•	2021.1.00499.S - Task Details	× +			$\sim$	- 0	$\times$
$\leftarrow$	$ ightarrow$ C $rac{1}{2}$		ile:///D:/pipeline/html/t2-4m.html?sideba	r=sidebar_stage7&ms=all&subpage=t2-4m_details.html		◧ ጏ	≡
L. J.	A Home By Topic	By Task				2021.1.00499.5	3
Tasks 1. hifa_ 2. hifa_ 3. hifa_	in execution order _importdata _flagdata _fluxcalflag		7. Flag T <sub>sys</sub> ca	libration		BACK	
4. hif_r 5. hif_r	awflagchans refant		Task notifications				
6. h_ts	yscal		Warning! uidA002_Xf396d6_>	45bb.ms - for intent AMPLITUDE (field 0: J1058+0133) and spw 23, the following antennas are fully flagged: DA52			
7. nna_ 8. hifa_	_tsysmag _antpos		Warning! uidA002_Xf396d6_>	45bb.ms - for intent BANDPASS (field 0: J1058+0133) and spw 23, the following antennas are fully flagged: DA52			
9. hifa_	wvrgcalflag		Warning! uidA002_Xf396d6_>	45bb.ms - the following antennas are moved to the end of the refant list because they are fully flagged for one or more Tsys spws, in one or more fields with intent "BANDPASS", "PHASE"	', and/or "AMPLITUDE": DA	\$52	
<ol> <li>10. http://www.international.com/in</li></ol>	Jonganinag _setmodels a_bandpassflag a_bandpass a_spikpitaseup a_afituxscaleflag a_afituxscale a_timegaincal a_targetflag a_targetflag a_targetflag makeimilist (cals) makeimilist (checksrc)	(	Contents - Reference antenna update - T <sub>sys</sub> after flagging - Flagged data summary - Flag step details - mardian - derivative - edgechans - fieldshape - birdies - toomany				
23. hif_ 24. hifa 25. hif_	_makeimages (checksrc) a_imageprecheck _checkproductsize	e	For the measurement set(s) listed measurement sets where it was me	na update elow, the reference antenna list was updated due to significant flagging (antennas moved to end and/or removed). See warnings in task notifications for details. Shown below are the update diffed.	ed reference antenna lists, «	only for those	
26. hifa 27. hifa	a_renorm a_exportdata		Measurement Set	Reference Antennas (Highest to Lowest)			
28. hif_ 29. hifa	_mstransform a_flagtargets		uidA002_Xf396d6_X45bb.ms	DA43, DV06, DV03, DV02, DV04, DV01, DA60, DA58, DV21, DA46, DA42, DV25, DA62, DA54, DA65, DV20, DA41, DA51, PM02, DA59, DV09, DA48, DV18, DV22, DV17, DV11, DA56 DA49, DV10, DV08, PM03, DA45, DA50, DV19, PM01, DV12, DA55, DA63, DV07, DA52	6, DV23, DA61, DV16, DV1	4, DV13, DV05,	
30. hif_ 31. hif_	_makeimlist (mfs) _findcont		Updated reference antenna selectio	n per measurement set. Antennas are listed in order of highest to lowest priority.			
32. hif	_uvcontfit		T <sub>sys</sub> vs frequency af	ter flagging			

**hifa\_tsysflag**: This step includes plots of the  $T_{sys}$  data (used to correct amplitudes) as a function of frequency. It is useful to check these plots to understand the atmospheric transmission. Spectral features in these data could potentially reappear in the final spectra of the science targets.

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۲	2021.1.00499.S - Task Details	×	) +										~	-	٥	>
$\leftarrow$	$ ightarrow$ C $rac{1}{2}$		D fi	le:///D:/pipeline/html/t2-4m.html?sideb	ar=sidebar_stage7&ms=all&su	bpage=t2-4m_details.html							≣ ☆		⊡ ĵ	-
	A Home By Topic	By 1	ask											20	/21.1.0049	9.S
Tasks 1. hifa	in execution order			For the measurement set(s) listed measurement sets where it was n	below, the reference antenna list nodified.	was updated due to significant flagging (a	intennas moved to	end and/	for removed). S	See warnings in task i	notifications for details. Sh	own below are the updat	ed reference ante	nna lists, only i	for those	
2. hifa	a_flagdata			Measurement Set	Measurement Set Reference Antennas (Highest to Lowest)											
3. mia 4. hif_i 5. hif_i	rawflagchans			uidA002_Xf396d6_X45bb.ms	A002_X396d6_X45bb.ms DA43, DV06, DV03, DV02, DV04, DV01, DA60, DA58, DV21, DA46, DA42, DV25, DA62, DA54, DA65, DV20, DA41, DA51, PM02, DA59, DV09, DA48, DV18, DV22, DV17, DV11, DA56, DV23, DA61, DV16, DV14, DV13, DV05, DA49, DV10, DV08, PM03, DA45, DA50, DV19, PM01, DV12, DA55, DA63, DV07, DA52											
6. h_ts	syscal		0	Updated reference antenna select	antenna selection per measurement set. Antennas are listed in order of highest to lowest priority.											
7. htfa_taysflag       8. htfa_antpos       9. htfa_wrgcallfag   Plots of time-averaged T vs frequency colored by attenna																
10. hifj 11. hifj	f_lowgainflag f_setmodels		0	uidA002_Xf396d6_X4	A002_Xf396d6_X45bb.ms											
12. hif 13. hif 14. hif 15. hif 16. hif 17. hif 18. hif	fa_bandpassflag fa_bandpass fa_spwphaseup fa_gfluxscaleflag fa_gfluxscale fa_timegaincal fa_targetflag		θ							υ (1994) 						
19. hif 20. hif 21. hif 22. hif	f_applycal f_makeimlist (cals) f_makeimages (cals) f_makeimlist (checksrc)			T <sub>sys</sub> spw 17 Science spw 17.		T <sub>sys</sub> spw 21 Science spw 21.			T <sub>sys</sub> spw Science sp	23 w 23.		T <sub>sys</sub> spw 19 Science spw 2	5.			
23. hif 24. hif	f_makeimages (checksrc) fa_imageprecheck		0	Flagging steps	Flagging steps											
25. hit 26. hit	t_checkproductsize fa_renorm			Measurement Set			manual	nmed	lian	derivative	edgechans	fieldshape	birdies	tooma	ny	
27. hif	fa_exportdata			uidA002_Xf396d6_X45bb.ms	h_tsyscal.s6_1.tsyscal.tbl		*	~		*	*	*	•	*		
28. hif 29. hif 30. hif 31. hif	r_mstranstorm fa_flagtargets f_makeimlist (mfs) f_findcont			Flagged data su	mmary d6_X45bb.ms.h_tsyscal.s	6_1.tsyscal.tbl										
32. hif	f_uvcontfit					Flagging Step		1 246				\'				

**hifa\_tsysflag**: This step includes plots of the  $T_{sys}$  data (used to correct amplitudes) as a function of frequency. It is useful to check these plots to understand the atmospheric transmission. Spectral features in these data could potentially reappear in the final spectra of the science targets.

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Home By Topic By Task			2021.1.0	0499 S
Tasks in execution order				
2. hifa flagdata	Measurement Set Reference Antennas (Hinhest to Lowest)			
4 hil_rawiiagchans	uidA002_Xf396d6_X45bb.ms.h_tsyscal.s6_1.tsyscal.tbl UT 12:24:1012:31:5212:44:0812:56:2613:08:4513:21:02	DA48, DV18, DV22, DV17, DV11, DA56, DV2		
5 hif_refant	spw17, fields 0,3: J1058+0133,PJ113921.7			
6. h_tsyscal	Updated reference antenna as PWV 4.15mm, airmass 1.23 (field 0)			
7 Materia	140			
8 hita antpos	I sys VS inequency			
10. hif lowganflag	Plots of time averaged T <sub>1,2</sub> vs 1			
11. hif_setmodels				
12. hifa_bandpassflag		- 1-16-19-101		
13 hife_bandpass		e in the second s		
14 hifa_spwphaseup				
15 hife_gfluxscaleRag				
17 hits interaines				
18 hifs targetflag	60	at a start of the second s		
19. hit_applycal	47%	Tere spw 19		
20 hif_makemlist (cals)	Science spw 17. 40	Science spw 25		
21. hit_makeimages (cala)				
22 hl[_makemlist (checksrc)				
23 hit_makeimages (checksrc)	Elagging stops 87.0 87.5 88.0 88.5			
24 http://mageprecheck	TOPO LSB Frequency (GHz) uid A002 Xf396d6 X45bb ms ObsDate=2021-12-04 plotbandpass v1 102 = 2018/01/21 14:45:41			
25 hits renorm	Measurement Set	gechans fieldshape		
27. hife exportdate			1 1	
28. hif_mstransform				
29. hifa_flagtargets				
The fail must strategy and the strategy	A002_XI396d6_X45bb ms h_tsyscal.s6_1 tsyscal.tbl			
	Hagging step			

hifa\_bandpass: Corrections for the phase and amplitude versus frequency are derived in this step.

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$\leftarrow$ $\rightarrow$ C $\textcircled{a}$	🗅 file	:///D:/pipeline/html/t2-4m.html?sidebar=side	ebar_stage13&r	ms=all&subpage=t2-4m_detail	ls.html				E 🏠	⊡ එ =	
Home By Topic	By Task									2021.1.00499.S	
Tasks in execution order       1. hifa_importdata       2. hifa_flagdata       3. hifa_fluxcaillag       4. hif_rawflagchans       5. hif_refant		13. Bandpass Ca	3. Bandpass Calibration								
6. h_tsyscal	•	Results									
8. hifa_antpos	<b>e</b>	Phase-up on bandpass calibrate	or								
9. hifa_wvrgcalflag				Phase-up Solution Par	rameters						
10. hif_lowgainflag	0	Measurement Set		Туре	Interval		Min Baselines per Antenna	Min SNR	Phase-up Bandwidth		
11. hif_setmodels 12. hifa_bandpassflag	0	uidA002_Xf396d6_X45bb.ms		Phase only	Per integration (6.05s)		4	3.0			
13. hifa_bandpass		Applied calibrations and parameters used	for phase-up cal	libration							
14. hifa_spwphaseup											
15. hifa_gfluxscaleflag		Bandpass calibration									
16. hifa_gfluxscale			Solution Pa	arameters	Applied To						
17. hita_timegaincai		Management Cat	Ture	lata and			Collinguity Toble				
19. hif applycal		Measurement Set	Туре	Interval	Scan Intent	Spectral Windows	Calibration Table				
20. hif_makeimlist (cals)		uidA002_Xf396d6_X45bb.ms	Channel	inf,15.625000MHz(1.0ch)	ALL	17	uidA002_Xf396d6_X45bb.ms.hifa_bandpass.s13_	3.spw17_21_23_25.cha	annel.solintinf.bcal.tbl		
21. hif_makeimages (cals)						21					
22. hif_makeimlist (checksrc)						23					
23. hif_makeimages (checksrc)						23					
24. hifa_imageprecheck	0			inf,3.906250MHz(1.0ch)		25					
25. hif_checkproductsize		Parameters used for bandpass calibration									
26. htta_renorm											
28 hif mstransform		Plots									
29. hifa flagtargets		Plots show the bandpass correction applie	ed to the target s	source. The first two plots show a	amplitude vs frequenc	y; one for the reference a	ntenna and one for a typical antenna, identified the antenna	with mode score. The t	third plot shows phase vs freq	uency for the	
30. hif_makeimlist (mfs)		typical antenna.	3			-					
31. hif_findcont		Click the summary plots to enlarge them,	or the plot title t	to see see detailed plots per spe	ctral window and ante	nna.					
32. hif_uvcontfit		uidA002_Xf396d6_X45bb.m	s								

The plots of these quantities versus frequency should be smooth. Any strong spikes or dips in the data could create false spectral lines in the final image cubes.

😆 2021.1.00499.S - Task Details × +		~ - <b>o</b> ×
$\leftarrow$ $\rightarrow$ C $\textcircled{a}$ D file:///D	D:/pipeline/html/t2-4m.html?sidebar_sidebar_stage13&ms=all&subpage=t2-4m_details.html	Ē☆ Ē ģ ≡
Home By Topic By Task		2021.1.00499.S
Tasks in execution order 1. hifa_importdata 2. hifa_flagdata 3. hifa_fluxcalflag 4. hif_rawflagchans 5. hif_refant 6. h_tsyscal	Plots show the bandpass correction applied to the target source. The first two plots show amplitude vs frequency; one for the reference antenna and one for a typical antenna, ident typical antenna. Click the summary plots to enlarge them, or the plot title to see see detailed plots per spectral window and antenna. uidA002_Xf396d6_X45bb.ms	tified the antenna with mode score. The third plot shows phase vs frequency for the
<ul> <li>7. hifa_tsysflag</li> <li>8. hifa_antpos</li> <li>9. hifa_uwrgcalflag</li> <li>10. hif_lowgainflag</li> <li>11. hif_setmodels</li> <li>12. hifa_bandpassflag</li> <li>13. hifa_bandpass</li> <li>14. hifa_spwphaseup</li> <li>15. hifa_gfluxscaleflag</li> <li>16. hifa_gfluxscale</li> <li>17. hifa_timegaincal</li> <li>18. hifa_targetflag</li> <li>19. hif_applycal</li> <li>20. hif_makeimist (cals)</li> <li>21. hif_makeimist (cals)</li> <li>22. hif_makeimist (cals)</li> </ul>	Amplitude vs frequency (show uidA002_Xf396d6_X45bb.ms)The plots below show amplitude vs frequency for the bandpass correction, overlayed for all spectral windows and correlations. Click on the link above to show show detailed plots for all antennas, or on the links below to show plots with specific antennas preselected.Image: Colspan="2">Image: Colspan="2" Co	Phase vs frequency (show uidA002_Xf396d6_X45bb.ms)The plot below shows phase vs frequency for the bandpass correction, overlayed for all spectral windows and correlations. Click on the link above to show show phase vs frequency plots for all antennas, or on the link for just the typical antenna.Typical antenna (DA41) (show DA41)Phase vs frequency for a typical antenna (DA41). Click the link above to show
22. hir_makeimist (checksrc) 23. hir_makeimages (checksrc) 24. hifa imageprecheck 25. hir_checkproductsize 26. hirfa_renorm 27. hifa_exportdata 28. hir_mstransform 29. hira_flagtargets 30. hir_makeimist (mfs) 31. hirf_indcont 32. hir_uvcontfit	Pipeline QA Input Parameters Tasks Execution Statistics CASA logs for stage 13 • View or download stage13/casapy.log (152.1 KB)	detailed plots for DA41.

The plots of these quantities versus frequency should be smooth. Any strong spikes or dips in the data could create false spectral lines in the final image cubes.

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Home By Topic By Task							2021.1.00499.S
Tasks in execution order 1. hifa_importdata 2. hifa_flagdata 3. hifa_flagdata	Calibrated amplitu	de vs frequency	for uidA002_X	f396d6_X45bb.m	าร		BACK
4. hif_rawflagchans	Clip histogram range to match data range						
6. h tsyscal	SNR (Error Function)						
7. hifa_tsysflag							
8. hifa_antpos							260
9. hifa_wvrgcalflag							
10. hif_lowgainflag							
12 hifa bandpassflag	0.90 0.91	0.02 0.03	0.94 0.95	0.96	0.97 0.98	0.99	1.00
13. hifa_bandpass			QA Score	e			
14. hifa_spwphaseup	Spectral window filter			Antenna filter			
15. hita_gtiuxscaletiag	Show all sportral windows			Show all antonnac			
17 hifa timegaincal	Show an spectral windows			Show all antennas			
18. hifa targetflag							
19. hif_applycal	ed_abil_2010_201000_201000_ab_b0_ptempts.010_2000_17_11_01_2000_ability.000	edAlt(_2l(0),000,00,000,00,000,000,000,000,000,00	edR012_010066_01006.es.bh.forman.cl.().spel1_01_012_012_01000000000000000000000000	edAND_3199866,69966.ex.Ms_bindpan.cl(),1apd17(0,10,556e-ed.set0013ac.00 647.5 (641, spat)). And 6 (0199-010). spat) (217.16 789 (1,200, 01900 1,200)	edARD2_2018888_44586.ex.564_pinetees.cl2,1aprel/20,21,21,21,56.exes6.acmini/acc.80 6.ex (_6442,_quel2,_5624,_201886.cl2), suppl (2),217.16 1.427 11 201420144,_annue_1.220	441, 400, 10166, 4006, 40, 50, 50, 50, 50, 50, 50, 50, 50, 50, 5	and 2010 2010 deeped administration in Mediate wave 12/2010
20. hif_makeimlist (cals)	147	1453	and a stand branch to serve an	100	10	100	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
21. hif_makeimages (cals)	1. march		1 Carrier and	1 m hang	1	1.00	1
22. hif_makeimlist (checksrc)		······································	6.m	4.67		6.98	2
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The plots of these quantities versus frequency should be smooth. Any strong spikes or dips in the data could create false spectral lines in the final image cubes.

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hifa\_timegaincal: This module derives phase and amplitude corrections versus time. The output from this module only needs to be reviewed when problems arise with the data.

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14. hifa_spwphaseup				Solution Parameters Applied To							
15. hifa_gfluxscaleflag 16. hifa_gfluxscale 17. hifa_timenaincal			Measurement Set	Туре	Interval	Scan Intent	Spectral Windows	Gainfield	Calibration Table		
18. hifa_targetflag			uidA002_Xf396d6_X45bb.ms	Phase only	Infinite	PHASE	17, 21, 23, 25	nearest	uidA002_Xf396d6_X45bb.ms.hifa_timegaincal.s	17_2.spw17_21_23_25	solintinf.gpcal.tbl
19. hif_applycal			uidA002_Xf396d6_X45bb.ms	Phase only	Infinite	TARGET, CHECK	17, 21, 23, 25		uidA002_Xf396d6_X45bb.ms.hifa_timegaincal.s	17_2.spw17_21_23_25	.solintinf.gpcal.tbl
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<ul><li>23. hif_makeimages (checksrc)</li><li>24. hifa_imageprecheck</li></ul>		0	uidA002_Xf396d6_X45bb.ms	Amplitude only	Infinite	AMPLITUDE, BANDPASS, PHASE, POLARIZATION, POLANGLE, POLLEAKAGE	17, 21, 23, 25	nearest	uidA002_Xf396d6_X45bb.ms.hifa_timegaincal.s	17_7.spw17_21_23_25	.solintinf.gacal.tbl
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31. hif_findcont			Phase vs time								

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**hifa\_timegaincal**: This module derives phase and amplitude corrections versus time. The output from this module only needs to be reviewed when problems arise with the data.

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6. h_tsyscal 7. hifa_tsysfag 9. hifa_wryscaffag 10. hif_lowgainfag 10. hif_setmodels 12. hifa_bandpassflag 13. hifa_bandpass 14. hifa_spwphaseup 15. hifa_gfluxscaleflag 16. hifa_gfluxscale	<pre>uidA02Xf39666X45bb.ms </pre>	<b>Spectral window 21</b> Window 21 These vs time for spectral window 21, all antennas and correlations.	Spectral window 23. Phase vs time for spectral window 23, all antennas and correlations.	<b>billion billion bi</b>
17. http://tmaganical         18. htfp://tmacketimist/cals/         19. htf_applycal         20. htf_makelimist (cals)         21. htf_makelimist (cals)         22. htf_makelimist (checksrc)         23. htf_makelimiges (checksrc)         24. htfa_imageprecheck         25. htf_checkproductsize	Amplitude vs time Plots show the amplitude calibration to be applied to the target sor Click the summary plots to enlarge them, or the spectral window h uidA002Xf396d6X45bb.ms	urce. A plot is shown for each spectral window and each set of anten eading to see detailed plots per spectral window and antenna.	nas with the same antenna diameter, with amplitude correction data	points per antenna and correlation as a function of time.
26. htfa_renorm 27. htfa_exportdata 28. htf_mstransform 29. htfa_flagtargets 30. htf_makelmlist (mfs) 31. htf_findcont 32. htf_uvcontfit	Spectral window 17	sand and a sand	san de la construcción de la con	Spectral window 25

**hifa\_timegaincal**: This module derives phase and amplitude corrections versus time. The output from this module only needs to be reviewed when problems arise with the data.

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11. htf_setmodels 12. htfa_bandpassflag 13. htfa_bandpass 14. htfa_spwphaseup 15. htfa_gfluxscaleflag 16. htfa_gfluxscale <b>17. htfa_timegaincal</b> 18. htfa_targetflag 19. htfa_applycal		9	be a constrained of the second	because of the spectral window 21, all antennas and correlations.	between the formation of the spectral window 23, all antennas and correlations.	begin the second	antennas and
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18. hifa 19. hif_ 20. hif	a_targetflag _applycal _makeimlist (cals)			Applied calibration	ons										
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3. hifa_fluxcalflag 4. hif_rawflagchans 5. hif_refant		Plots of calibrated amplitude vs frequency for all antennas and corre uid	lations, coloured by antenna. The atmospheric transmission for eac	h spectral window is overlayed on each plot in pink.		
6. h_tsyscal 7. hifa_tsysflag 8. hifa_antons	0	Amp corrected, Atm Transmission vs. Frequency Spw: 17	Ampcorected, Alm Transmission vs. Frequency Spar 21	Ampcorrected, Atm Transmission ys. Frequency Spur 22	Amp:corrected, Atm Transmission vs. Frequent	cy Spw: 25
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14. hifa_spwphaseup		ALMA Band 3	ALMA Band 3	ALMA Band 3	ALMA Band 3	
16. hifa_gfluxscale		Intents: AMPLITUDE,BANDPASS Fields: J1058+0133	Intents: AMPLITUDE,BANDPASS Fields: J1058+0133	Intents: AMPLITUDE,BANDPASS Fields: J1058+0133	Intents: AMPLITUDE, BANDPASS Fields: J1058+0133	
17. hifa_timegaincal 18. hifa_targetflag		Amp:corrected, Atm Transmission vs. Frequency Spw: 17	Amp:corrected, Atm Transmission vs. Frequency Spw: 21	Amp:corrected, Atm Transmission vs. Frequency Spw: 23	Amp:corrected, Atm Transmission vs. Frequence	cy 5pw: 25
19. htf_applycal         20. htf_makeimlist (cals)         21. htf_makeimages (cals)         22. htf_makeimlist (checksrc)         23. htf_makeimages (checksrc)						14 12 19 19 19 10 10 10 10 10 10 10 10 10 10 10 10 10
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27. hifa_exportdata 28. hif_mstransform 29. hifa_flagtargets		ALIM Band 3 Intents: PHASE Fields: J1148+1840	ALIA Band 3 Intents: PHASE Fields: J1148+1840	ALMA Band 3 Intents: PHASE Fields: J1148+1840	ALMA Band 3 Intents: PHASE Fields: J1148+1840	
<ol> <li>30. hif_makeimlist (mfs)</li> <li>31. hif_findcont</li> <li>32. hif_uvcontfit</li> </ol>		Calibrated phase vs frequency				

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9. hifa_ 10. hif_ 11. hif_	wvrgcalflag Jowgainflag setmodels	0	spectral Window 17	ni in internet state state Spectral Window 21	nis nis nis nis nis Spectral Window 23	NS NS NS NS NS NS NS NS
12. hifa 13. hifa 14. hifa 15. hifa	i_bandpassflag i_bandpass i_spwphaseup i_gfluxscaleflag	θ	ALMA Band 3 Intents: BANDPASS Fields: J1058+0133	ALMA Band 3 Intents: BANDPASS Fields: J1058+0133	ALMA Band 3 Intents: BANDPASS Fields: J1058+0133	ALMABand 3 Intents: BANDPASS Fields: J1058+0133
16. hifa 17. hifa 18. hifa 19. hif_ 20. hif_ 21. hif_ 22. hif_ 23. hif_	_gfluxscale timegaincal targetflag applycal makeimilist (cals) makeimages (cals) makeimilist (checksrc) makeimages (checksrc)		Phase:corrected vs. Prequescy Spar: 17	Phase corrected vs. Frequency Spac 21	Phase:corrected vs. Prequency Spir: 23	Phase-corrected via. Prequency 5per 25
24. hifa 25. hif_ 26. hifa 27. hifa 28. hif_ 29. hifa	_imageprecheck checkproductsize enorm exportdata stransform flagtargets	0	Spectral Window 17 ALMA Band 3 Intents: PHASE Fields: J1148+1840	Spectral Window 21 ALMA Band 3 Intents: PHASE Fields: J1148+1840	Spectral Window 23 ALMA Band 3 Intents: PHASE Fields: J1148+1840	Spectral Window 25 ALMA Band 3 Intents: PHASE Fields: J1148+1840
30. hif_ 31. hif_	makeimlist (mfs) findcont		Plots of calibrated amplitude vs UV distance for the calibrators i	; n each measurement set. Data are plotted for all antennas, coloured	by correlation.	

uid A002 Xf396d6 X45bb.ms

32. hif uvcontfi

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<ul> <li>b. nir_erant</li> <li>c. h_tsyscal</li> <li>c. h_tsystag</li> <li>d. hifa_antpos</li> <li>d. hifa_uwrgcalflag</li> <li>d. hif_lowgainflag</li> <li>d. hifa_bandpassflag</li> <li>d. hifa_bandpass</li> <li>d. hifa_spwphaseup</li> </ul>	Spectral Window 17 ALMA Band 3	Spectral Window 21 ALMA Band 3	Spectral Window 23 ALMA Band 3	Spectral Window 25 ALMA Band 3 Intents: AMPLITUDE, BANDPASS
15. hifa_gfluxscaleflag 16. hifa_gfluxscale 17. hifa_timegaincal 18. hifa_targetflag 19. hif_applycal 20. hif_makeimlist (cals) 21. hif_makeimlist (checksrc) 22. hif_makeimlist (checksrc) 23. hif_makeimlist (checksrc) 24. hifa_images(checksrc)	Fields: J1058+0133	Fields: J1058+0133	Fields: J1058+0133	Fields: J1058+0133
25. hif_checkproductsize 26. hifa_renorm 27. hifa_exportdata 28. hifa_mstransform 29. hifa_flagtargets 30. hif_makeimlist (mfs) 31. hif_findcont 32. hif_uvcontfit 33. hif_uvcontfit	Spectral Window 17 ALMA Band 3 Intents: PHASE Fields: J1148+1840 (Corrected amplitude / model) vs UV Plots of the ratio of the corrected amplitude to the model column v uid A002 Xf396d6 X45bb ms	Spectral Window 21 ALMA Band 3 Intents: PHASE Fields: J1148+1840 distance alue versus UV distance. Data are coloured by antenna and are	Spectral Window 23 ALMA Band 3 Intents: PHASE Fields: J1148+1840 shown for all antennas and correlations.	Spectral Window 25 ALMA Band 3 Intents: PHASE Fields: J1148+1840

**hif\_makeimages (cals)**: When this is first called, it makes continuum images of each calibrator in each spw for quality assessment. The images of the phase calibrator (which is near the science targets) are useful to look at to understand the beam size and shape.

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30. hif_makeimlist (mfs) 31. hif_findcont 32. hif_uvcontfit 33. hif_uvcontfit		cleaning threshold	3.1 mJyheam Diny DR: 8.5e+04 DR correction: 31 10.62	2 9 mJy/beam Dirly DR: 7.9e+04 DR correction: 28 14.39	2 9 mJy/beam Dirty DR: 7:5e+04 DR correction: 27 13:49	3 mJy/beam Dirly DR: 8.2e+04 DR correction: 29 11.71	

**hif\_makeimages (cals)**: When this is first called, it makes continuum images of each calibrator in each spw for quality assessment. The images of the phase calibrator (which is near the science targets) are useful to look at to understand the beam size and shape.

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**hifa\_imageprecheck**: This module estimates beam sizes using different robust factors for imaging, which is useful to refer to when re-imaging the data. The row in green is selected for subsequent imaging steps.

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<ol> <li>hit_rawflagchans</li> <li>hit_refant</li> <li>h_tsyscal</li> <li>hit_sysfag</li> <li>hifa_tsysfag</li> <li>hifa_antpos</li> <li>hifa_bandpassflag</li> <li>hifa_bandpassflag</li> <li>hifa_bandpass</li> <li>hifa_spwphaseup</li> <li>hifa_gluxscaleflag</li> <li>hifa_gluxscale</li> <li>hifa_targeflag</li> <li>hifa_targeflag</li> </ol>	<ul> <li>Goals F Represent Represent Bandwidt Min / Max Maximum</li> <li>Goal PI so Single Co</li> <li>Estimate that predict is chosen aggregate is predicte the four ro</li> </ul>	irom OT: lative Target: PJ113921.7. lative Frequency: 89.6311. for Sensitivity: 11.96 Mł. Acceptable Resolution: expected beam axial rat ansitivity: 0.405 mJy ntinuum: False ed Synthesized Be ar are given for four possib ts a beam area (defined if the predicted beam arr continuum bandwidth (a d using all spws, otherw bust values, Warning me	I GHz (SPW 25) iz (rounded to nearest integer #channels (3), repBv 0.566 arcsec / 0.850 arcsec io (from OT): 2.5 am and Sensitivities for the Represente e values of the tclean robust weighting parameter: as simply major x minor) that is in the range of the a is too small, and robust=0.0 is chosen if the prev gBW) is also given assuming NO line contaminati se the beam is predicted for the repSPW alone. A ssages appear on this page.	N = 11.72 MHz) ative Target/Frequency robust = 0.0, +0.5 (default), +1.0, and +2.0. If the "Mi PI requested beam areas according to the table row fo dicted beam area is too large. The chosen robust value on but accounting for spw frequency overlap. If the Bar message appears on the "By Task" view if a non-defau	in / Max Acceptable Resolu or repBW (Bandwidth for Sen e is highlighted in green and to ndwidth for Sensitivity (repBW ult value of robust (i.e., not +C	ution" is available (>–Cy stivity) is chosen. If none used for all science target i ) is > the bandwidth of the 5.6) is chosen. Additionally	cle 5 12-m Array data), th of these robust values pred imaging In addition to an e o spw containing the repres i, if the predicted beam is n	e robust value closest to ict a beam area that is in stimate for the repBW, an entative frequency (repSP ot within the PI requested	the default (+0.5) range, robust=+2.0 estimate for the W), then the beam range using one of
19. hif_applycal 20. hif_makeimlist (cals) 21. hif_makeimages (cals)	These es bandwidth calibration the releva	timates should always due to the hif_findcont p deficiencies (poor phase nt spws as described ab	be considered as the BEST CASE SCENARIO. T rocess (i.e. removal of lines and other spectral feat transfer, residual baseline based effects, residual ove. The synthesized beam for a single channel in	These estimates account for Tsys, the observed uv-cov ures from the data used to image the continuum); (3) I antenna position errors, etc.). It is also important to no a cube will typically be larger and can be significantly	verage, and prior flagging. The ssues that affect the image q ote that both the repBW and larger depending on the deta	e estimates DO NOT accou quality like (a) poor match o aggBW beam calculations ils of uv-coverage and chai	Int for (1) subsequent scier of uv-coverage to image cor s are intrinsically multi-frequence nnel width.	nce target flagging; (2) los nplexity; (b) dynamic rang iency synthesis continuur	s of continuum je effects; (c) n calculations, using
<ol> <li>22. mi_makermist (cnecksrc)</li> <li>23. hif_makeimages (checksrc)</li> </ol>	robust	uvtaper	Synthesized Beam	Cell	Beam Ratio	Bandwidth	BW Mode	Effective Sensitivity	
24. hifa_imageprecheck	<ul> <li>0.0</li> </ul>	0	0.489 x 0.380 arcsec @ -14.2 deg	0.076 x 0.076 arcsec	1.29	11.72 MHz	repBW	0.00033 Jy/beam	
25. hif_checkproductsize	0.0	0	0.457 x 0.306 arcsec @ -18.5 deg	0.061 x 0.061 arcsec	1.29	7255 MHz	aggBW	1.24e-05 Jy/beam	
26. hita_renorm 27. hifa_exportdata	0.5	Π	0.616 × 0.463 arcsec @ -19.2 deg	0.093 x 0.093 arcsec	1.33	11.72 MHz	repBW	0.00025 Jy/beam	
28. hif_mstransform	0.5	0	0.581 x 0.387 arcsec @ -20.2 deg	0.077 x 0.077 arcsec	1.33	7255 MHz	aggBW	9.38e-06 Jy/beam	
2.5. ma_nagtargets 30. hif_makeimlist (mfs)	1.0	0	0.889 x 0.590 arcsec @ -33.7 deg	0.12 x 0.12 arcsec	1.51	11.72 MHz	repBW	0.000222 Jy/beam	
31. hif_findcont	1.0	0	0.809 x 0.508 arcsec @ -29.5 deg	0.1 x 0.1 arcsec	1.51	7255 MHz	aggBW	8.35e-06 Jy/beam	
32. http://www.seconterith	2.0	п	1.03 x 0.665 arcsec @ -36.8 deg	0.13 x 0.13 arcsec	1.55	11.72 MHz	repBW	0.000219 Jv/beam	

**hifa\_imageprecheck**: This module estimates beam sizes using different robust factors for imaging, which is useful to refer to when re-imaging the data. The row in green is selected for subsequent imaging steps.

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9. hifa_wvrgcalflag 10. hif Iowgainflag	0	robust	uvtaper	Synthesized Beam	Cell	Beam Ratio	Bandwidth	BW Mode	Effective Sensitivity		
11. hif_setmodels	•	0.0	0	0.489 x 0.380 arcsec @ -14.2 deg	0.076 x 0.076 arcsec	1.29	11.72 MHz	repBW	0.00033 Jy/beam		
13. hifa_bandpass	•	0.0	0	0.457 x 0.306 arcsec @ -18.5 deg	0.061 x 0.061 arcsec	1.29	7255 MHz	aggBW	1.24e-05 Jy/beam		
14. hifa_spwphaseup		0.5	0	0.616 x 0.463 arcsec @ -19.2 deg	0.093 x 0.093 arcsec	1.33	11.72 MHz	repBW	0.00025 Jy/beam		
15. htfa_gfluxscaleflag 16. htfa_gfluxscale		0.5	0	0.581 x 0.387 arcsec @ -20.2 deg	0.077 x 0.077 arcsec	1.33	7255 MHz	aggBW	9.38e-06 Jy/beam		
17. hifa_timegaincal		1.0	0	0.889 x 0.590 arcsec @ -33.7 deg	0.12 x 0.12 arcsec	1.51	11.72 MHz	repBW	0.000222 Jy/beam		
18. hifa_targetflag 19. hif applycal		1.0	D	0.809 x 0.508 arcsec @ -29.5 deg	0.1 x 0.1 arcsec	1.51	7255 MHz	aggBW	8.35e-06 Jy/beam		
20. hif_makeimlist (cals)		2.0	0	1.03 x 0.665 arcsec @ -36.8 deg	0.13 x 0.13 arcsec	1.55	11.72 MHz	repBW	0.000219 Jy/beam		
21. hif_makeimages (cals) 22. hif_makeimlist (checksrc)		2.0	0	0.968 x 0.591 arcsec @ -33.9 deg	0.12 x 0.12 arcsec	1.55	7255 MHz	aggBW	8.21e-06 Jy/beam		
23. hif_makeimages (checksrc)	0	Pipeline (	٨٥								
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32. hif uscontoub											

**hif\_findcont**: This is where the pipeline creates initial image cubes and identifies continuum channels (although the identification is not always optimal). This is useful as a first look at the spectra, although re-imaging the data may be much more effective for identifying spectral lines.

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<ol> <li>12. hifa_bandpassflag</li> <li>13. hifa_bandpass</li> <li>14. hifa_spwphaseup</li> </ol>	θ			88.41621 GHz	88.66618 GHz			4000 - 40000 - 4000 - 4000 - 4000 - 4000 - 4000 - 4000 - 4000 - 4000 - 4	<ul> <li>Kennes Jack</li> <li>BigH Ascentral Large</li> <li>TegH Ascentral Large</li> <li>TegH Ascentral Large</li> </ul>	
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26. hifa_renorm 27. hifa_exportdat	ta			View other QA images	View other QA images	View other QA images	View other QA images	
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30. hif_makeimlist 31. hif_findcont	t (mfs)		beam p.a.	-32.7deg	-26.7deg	-22.3deg	-34.7deg	
32. hif_uvcontfit 33. hif_uvcontsub			final theoretical sensitivity	23 uJy/beam	18 uJy/beam	19 uJy/beam	21 uJy/beam	
34. hif_makeimag 35. hif_makeimlist 36. hif_makeimag	ges (mfs) st (cont) ges (cont)		cleaning threshold	46 uJy/beam Dirty DR: 8.5 DR correction: 1	37 ⊎Jybeam Dirty DR: 15 DR correction: 1	38 uJy/beam Dirty DR: 16 DR correction: 1	41 uJy/beam Dirty DR: 9.4 DR correction: 1	
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39. hif_makeimlist	t (cube_repBW)		non-pbcor image RMS	26 uJy/beam	21 uJy/beam	21 uJy/beam	24 uJy/beam	
40. hif_makeimag	ges (cube_repBW)		pbcor image max / min	479 / -299 uJy/beam	297 / -265 uJy/beam	265 / -324 uJy/beam	319 / -294 uJy/beam	

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<ul><li>35. hif_makeimlist (cont)</li><li>36. hif_makeimages (cont)</li><li>37. hif_makeimlist (cube)</li></ul>			cleaning threshold	30 uJy/beam Dirty DR: 25 DR correction: 1.5
<ol> <li>38. hif_makeimages (cube)</li> <li>39. hif_makeimlist (cube_repBW)</li> <li>40. hif_makeimages (cube_repBW)</li> </ol>			clean residual peak / scaled MAD non-pbcor image RMS	4.86 12 uJy/beam

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Home By Topic	By Task						2021.1.00499.S
<ol> <li>ning_ampos</li> <li>hifa_wvrgcallfag</li> <li>hif_lowgainflag</li> <li>hif_setmodels</li> <li>hifa_bandpassflag</li> <li>hifa_bandpass</li> </ol>	9 9	38. Tclean/M	akelmages		BACK		
14. hifa_gfluxscaleflag		Image Details					
16. hifa_gfluxscale		Field	Spw				
17. hifa_timegaincal 18. hifa_targetflag		PJ113921.7 (TARGET)	17 / X1620027342#ALMA_RB_03#BB_1#SW-01	21/ X1620027342#ALMA_RB_03#BB_3#SW-01	23 / X1620027342#ALMA_RB_03#BB_4#SW-01	25/ X1620027342#ALMA_RB_03#BB_2#SW-0	11
<ol> <li>ht_applycal</li> <li>hit_makeimlist (cals)</li> <li>hit_makeimages (cals)</li> <li>hit_makeimlist (checksrc)</li> <li>hit_makeimages (checksrc)</li> <li>hit_inageprecheck</li> </ol>	Θ					Statistics for the statistic statistic statistic statistics and statistics of the statistic statistics of the statistics	
25. htf_checkproductsize 26. hifa_renorm 27. hifa_exportdata			New other QA images	Night Accesses (access) - Night Accesses (access)	New other CA images	Right Accession (access)	*
28. hif_mstransform		centre / rest frequency of cube	87.8616GHz / 339.0000GHz (LSRK)	100.0440GHz / 386.0000GHz (LSRK)	101.6004GHz / 392.0000GHz (LSRK)	89.6280GHz / 345.7960GHz (LSRK)	
29. hifa_flagtargets 30. hif_makeimlist (mfs)		beam	0.915 x 0.617 arcsec	0.819 x 0.465 arcsec	0.748 x 0.463 arcsec	0.907 x 0.608 arcsec	
31. hif_findcont		beam p.a.	-33.9deg	-29.0deg	-23.6deg	-33.8deg	
32. hif_uvcontfit		final theoretical sensitivity	0.12 mJy/beam	0.12 mJy/beam	0.12 mJy/beam	0.37 mJy/beam	
33. hr_uvconsub 34. hif_makeimages (mfs) 35. hif_makeimlist (cont) 36. hif_makeimages (cont)		cleaning threshold	0.23 mJy/beam Dirfy DR: 6.3 DR correction: 1	findCont=AllCont, no cleaning 0 J//beam Dirty DR: 6.2 DR correction: 1	findCont=AllCont, no cleaning 0 Jybeam Dirty DR: 6.2 DR correction: 1	1.1 mJy/beam Dirty DR: 21 DR correction: 1.5	
37. hif_makeimlist (cube) 38. hif_makeimages (cube)		clean residual peak / scaled MAD	5.58	-5.69	-5.67	6.55	
<ol> <li>39. hif_makeimlist (cube_repBW)</li> <li>40. hif_makeimages (cube_repBW)</li> </ol>		non-pbcor image RMS / RMS <sub>min</sub> / RMS <sub>max</sub>	0.13 / 0.12 / 0.13 mJy/beam	0.13 / 0.12 / 0.14 mJy/beam	0.14 / 0.13 / 0.16 mJy/beam	0.42 / 0.4 / 0.45 mJy/beam	

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JAIMA	A Home By Topic	By Task							2021.1.00499.S
8. hifa_ 9. hifa_ 10. hif_ 11. hif_	antpos wvrgcalflag lowgainflag setmodels	0	Clean resu	Its for PJ11392	1.7 <mark>(TARGET) S</mark> pW	/ 17			H H BACK
12. hifa 13. hifa	_bandpassflag   bandpass	0	Iteration Image		Residual	Clean Mask	Line-free Moment 0	Line-free Moment 8	Spectra
14. hifa 15. hifa 16. hifa 17. hifa 18. hifa 19. hif_ 20. hif_ 21. hif_	<ol> <li>Ima_uantipass</li> <li>Infa_spwphaseup</li> <li>Infa_gfluxscaleflag</li> <li>Infa_gfluxscale</li> <li>Infa_timegaincal</li> <li>Infa_targetflag</li> <li>Infa_pplycal</li> <li>Inf_makeimlist (cals)</li> <li>Inf_makeimlages (cals)</li> </ol>		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	A DE LA LA DECEMBRA DE LA DECEMBRA	Constructions Red(INI1 strate) Ford		Tatisfield in funding of approximate staff (1)(1) of appro	prevention for the second seco	
22. hif_ 23. hif_ 24. hifa 25. hif_ 26. hifa	makeimlist (checksrc) makeimages (checksrc) Limageprecheck checkproductsize	Ð	0						
27. hifa 28. hif_ 29. hifa				<ul> <li>An and a second s</li></ul>					
30. hif_ 31. hif_ 32. hif_ 33. hif_ 34. hif_ 35. hif_ 36. hif_	makeimlist (mfs) findcont uvcontfit uvcontsub makeimages (mfs) makeimlist (cont) makeimages (cont)				District Assessment Assessment 1 anges 1 dars				
37. hif_ 38. hif_ 39. hif	makeimlist (cube) makeimages (cube) makeimlist (cube, renBW)			Primary Beam	PSF	Final Model			
40 kit	makaimagaa (ouba ra-DMA)								

40. hif\_makeimages (cube\_repBW)

The inset in the PSF image (when present) corresponds to the central 41 pixels of the PSF. When the beam shape is significantly non-Gaussian, the dotted contour of the 50% level of the PSF image will become distinctly visible apart from the fitted southeesized beam which is shown as the solid contour.

As a final note, the visibility data created by the ALMA pipeline (or the manual calibration scripts in the archive) is designated as science ready. It can immediately be used for science.

However, the images from the ALMA Science Archive, including those shown in the WebLogs, are **NOT** considered to be science ready. They can be used as a quick look at the data or making initial measurements but should not be used for making final measurements.