

Netherlands Institute for Radio Astronomy

OFAR

MSSS Update

George Heald (MSSS Project Leader) (on behalf of the MSSS Team) LSM, 20/2/13

ASTRON is part of the Netherlands Organisation for Scientific Research (NWO)

MSSS-HBA Observing Status



Not yet observed (95.2%)

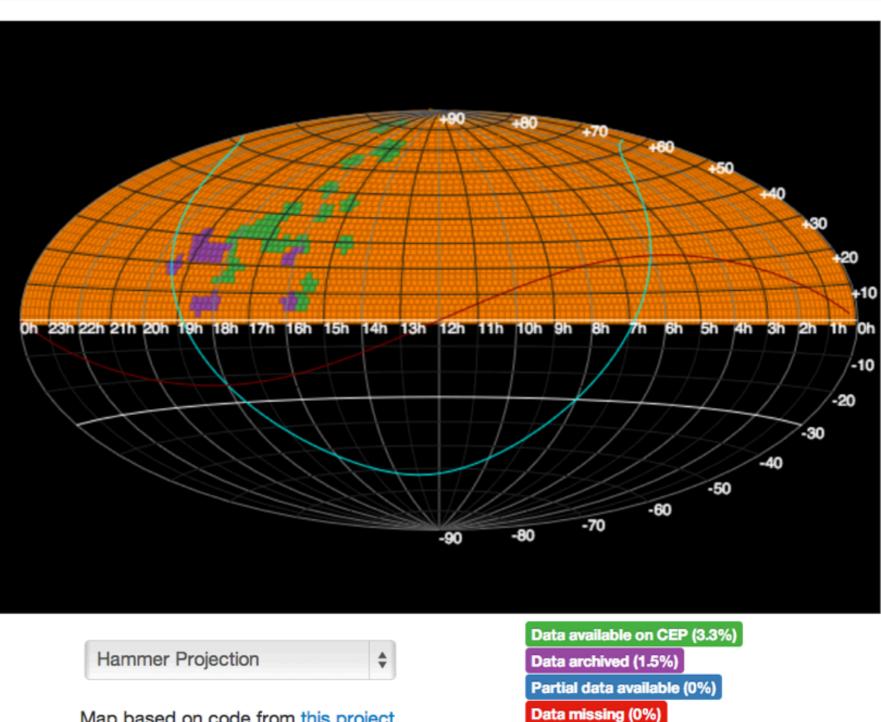
LOFAR Observation Database

MSSS HBA

Number of Targets	3616
Number of Calibrators	8
Start Date	8 Feb. 2013
Stop Date	15 Feb. 2013
Completed Fields	180 (5.0%)
Information collected	19 Feb. 2013

Show me the data »

Swinbank



Map based on code from this project.

MSSS-HBA data processing

- Pipeline processing works automatically
- We've used output of target pipelines
 to assess data
 quality & robustness
 of pipeline steps

My Account								
ect List Query List Project Explorer Preferen	nces Too	ols Admin						
E Copy selected 🖼 Move selected 🖆 Delete selected 🗇 Change status								
ject Explorer			Status					
MSSS_HBA_2013	Add	Details	active	MSSS HBA Survey				
Feb_8_2013	Add	Details		<automatic></automatic>				
Feb_15_2013	Add	Details		<automatic></automatic>				
H221+29_20130215_023	Add	Details		Calobs:MS3_20130215_0229				
H224+68_20130215_025	Add	Details		Calobs:MS3_20130215_0229				
H227+46_20130215_030	Add	Details		Calobs:MS3_20130215_0229				
H229+70_20130215_031	Add	Details		Calobs:MS3_20130215_0229				
H232+15_20130215_032 H235+07_20130215_032	Add	Details		Calobs:MS3_20130215_0229				
H235+07_20130215_033 H237+41_20130215_034	Add	Details		Calobs:MS3_20130215_0229				
H237+41_20130215_034 H240+29_20130215_035	Add	Details		Calobs:MS3_20130215_0229				
	Add	Details		Calobs:MS3_20130215_0229 Calobs:MS3_20130215_0229				
H243+51_20130215_040 H246+63_20130215_041	Add	Details		Calobs:MS3_20130215_0229 Calobs:MS3_20130215_0229				
	Add	Details		Calobs:MS3_20130215_0229				
	Add	Details		Calobs:MS3_20130215_0229				
 H254+29_20130215_045 	Add	Details		Calobs:MS3_20130215_0229				
H257+34_20130215_050	Add	Details		Calobs:MS3 20130215 0229				
H260+39_20130215_051	Add	Details		Calobs:MS3_20130215_0229				
H263+34_20130215_052	Add	Details		Calobs:MS3_20130215_0229				
H265+22_20130215_053	Add	Details		Calobs:MS3_20130215_0229				
MS3_20130215_0229/3C	Add	Details	finished	[94094] MS3_20130215_0229/3C380/1/CO (Calibration Observation)				
MS3_20130215_0229/3C	Restart	Details 🛱	finished	[91938] MS3_20130215_0229/3C380/1/CPC (Calibrator Pipeline)				
MS3_20130215_0229/H2	Add	Details	finished	[94093] MS3_20130215_0229/H265+22/1/TO (Target Observation)				
MS3_20130215_0229/H2	Restart	Details 📬	finished	[91939] MS3_20130215_0229/H265+22/1.0/TP (Target Pipeline)				
MS3_20130215_0229/H2	Restart	Details 📬	finished	[91940] MS3_20130215_0229/H268+22/1.1/TP (Target Pipeline)				
MS3_20130215_0229/H2	Restart	Details 📬	finished	[91941] MS3_20130215_0229/H264+19/1.2/TP (Target Pipeline)				
MS3_20130215_0229/H2	Restart	Details 📴	finished	[91942] MS3_20130215_0229/H267+19/1.3/TP (Target Pipeline)				
MS3_20130215_0229/H2	Restart	Details 📬	finished	[91943] MS3_20130215_0229/H269+24/1.4/TP (Target Pipeline)				
MS3_20130215_0229/H2	Restart	Details 📬	finished	[91944] MS3_20130215_0229/H262+19/1.5/TP (Target Pipeline)				
MS3_20130215_0229/3C	Add	Details	finished	[94092] MS3_20130215_0229/3C380/2/CO (Calibration Observation)				
MS3_20130215_0229/3C	Restart	Details 6	finished	[91945] MS3_20130215_0229/3C380/2/CPC (Calibrator Pipeline)				
•	Add	Details	finished	[94091] MS3_20130215_0229/H265+22/2/TO (Target Observation)				
MS3_20130215_0229/H2	Restart	Details 👰	finished	[91946] MS3_20130215_0229/H265+22/2.0/TP (Target Pipeline)				
MS3_20130215_0229/H2	Restart	Details 👰	finished	[91947] MS3_20130215_0229/H268+22/2.1/TP (Target Pipeline)				
MS3_20130215_0229/H2	Restart	Details 👰	finished	[91948] MS3_20130215_0229/H264+19/2.2/TP (Target Pipeline)				
MS3_20130215_0229/H2	Restart	Details 👰	finished	[91949] MS3_20130215_0229/H267+19/2.3/TP (Target Pipeline)				
MS3_20130215_0229/H2	Restart	Details 7	finished	[91950] MS3_20130215_0229/H269+24/2.4/TP (Target Pipeline)				
MS3_20130215_0229/H2	Restart	Details 📬	finished	[91951] MS3_20130215_0229/H262+19/2.5/TP (Target Pipeline)				
MS3_20130215_0229/H2		Details	approved	[91952] MS3_20130215_0229/H265+22/IM (Imaging pipeline beam 0)				
MS3_20130215_0229/H2		Details	approved	[91953] MS3_20130215_0229/H268+22/IM (Imaging pipeline beam 1)				
MS3_20130215_0229/H2		Details	approved	[91954] MS3_20130215_0229/H264+19/IM (Imaging pipeline beam 2)				
MS3_20130215_0229/H2		Details	approved	[91955] MS3_20130215_0229/H267+19/IM (Imaging pipeline beam 3)				
MS3_20130215_0229/H2		Details	approved	[91956] MS3_20130215_0229/H269+24/IM (Imaging pipeline beam 4)				
MS3_20130215_0229/H2		Details	approved	[91957] MS3_20130215_0229/H262+19/IM (Imaging pipeline beam 5)				
H268+17_20130215_054	Add	Details		Calobs:MS3_20130215_0229				
H271+31_20130215_055	Add	Details		Calobs:MS3_20130215_0229				
H273+80_20130215_060	Add	Details		Calobs:MS3_20130215_0229				
H276+73_20130215_061	Add	Details		Calobs:MS3_20130215_0229				
H276_20130215_61_tst	Add	Details		Calobs:MS3_20130215_0229				
Feb_15_2013		Details 🕵	scheduled	Data archived in Long Time Archive (Download)				

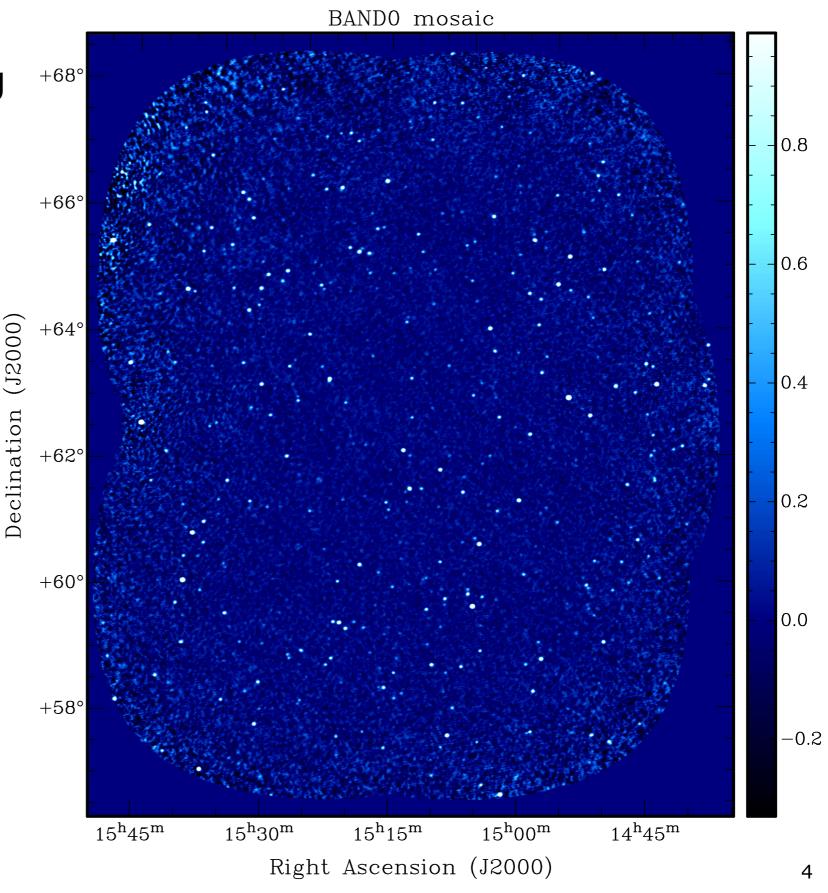
LOFAR ASTRON

MSSS-HBA now in 8-bit mode



Jy/beam

- Starting from pipeline output and (re)running some steps manually results in this mosaic
- Plan is to massage the imaging step

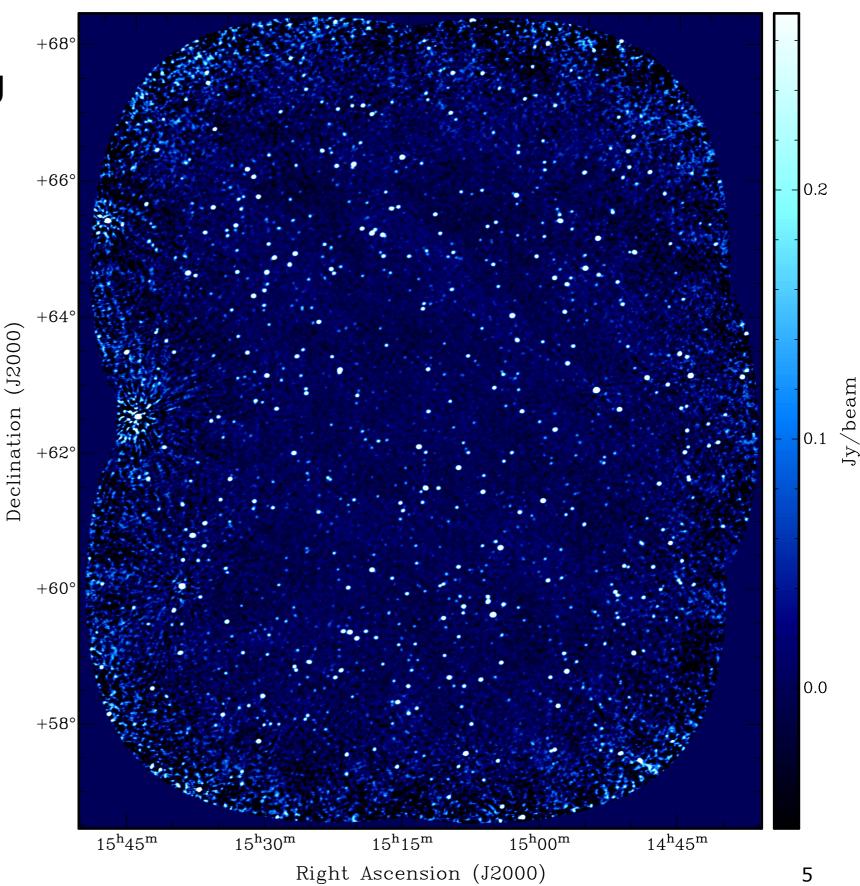


George Heald / LSM / 20-02-2013

MSSS-HBA now in 8-bit mode



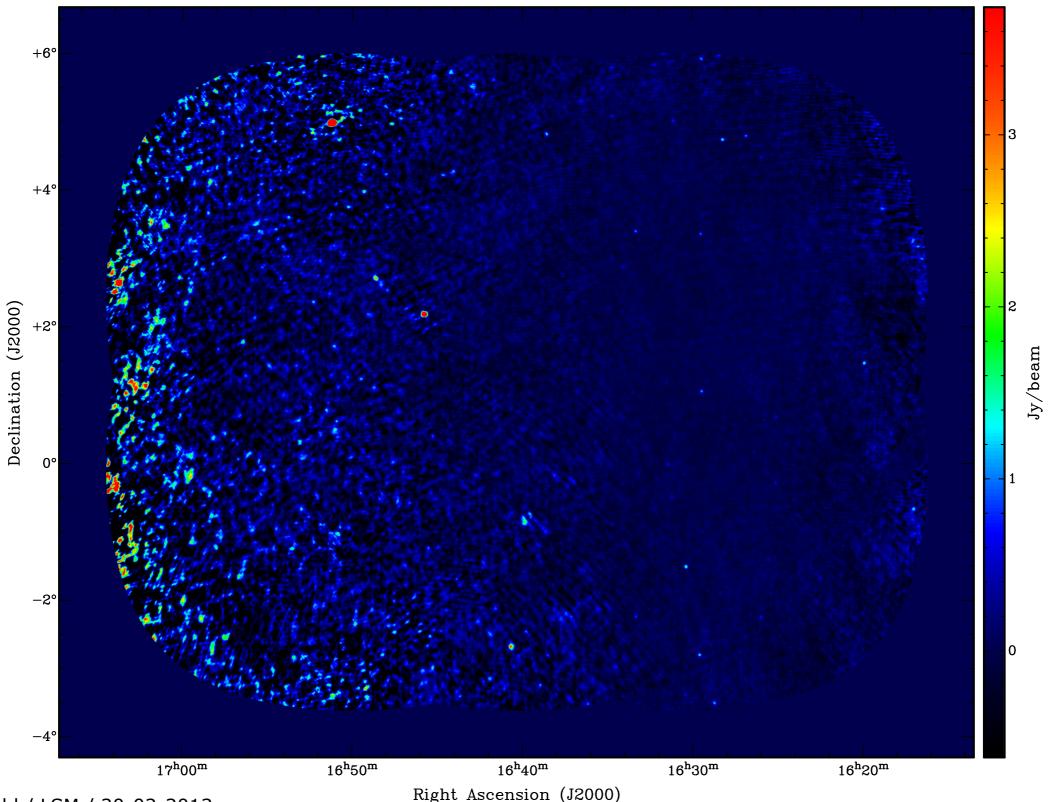
- Starting from pipeline output and (re)running some steps manually results in this mosaic
- Plan is to massage the imaging step
- Combining all bands leads to final image (σ=10 mJy/beam at resolution~2')



Bright sources



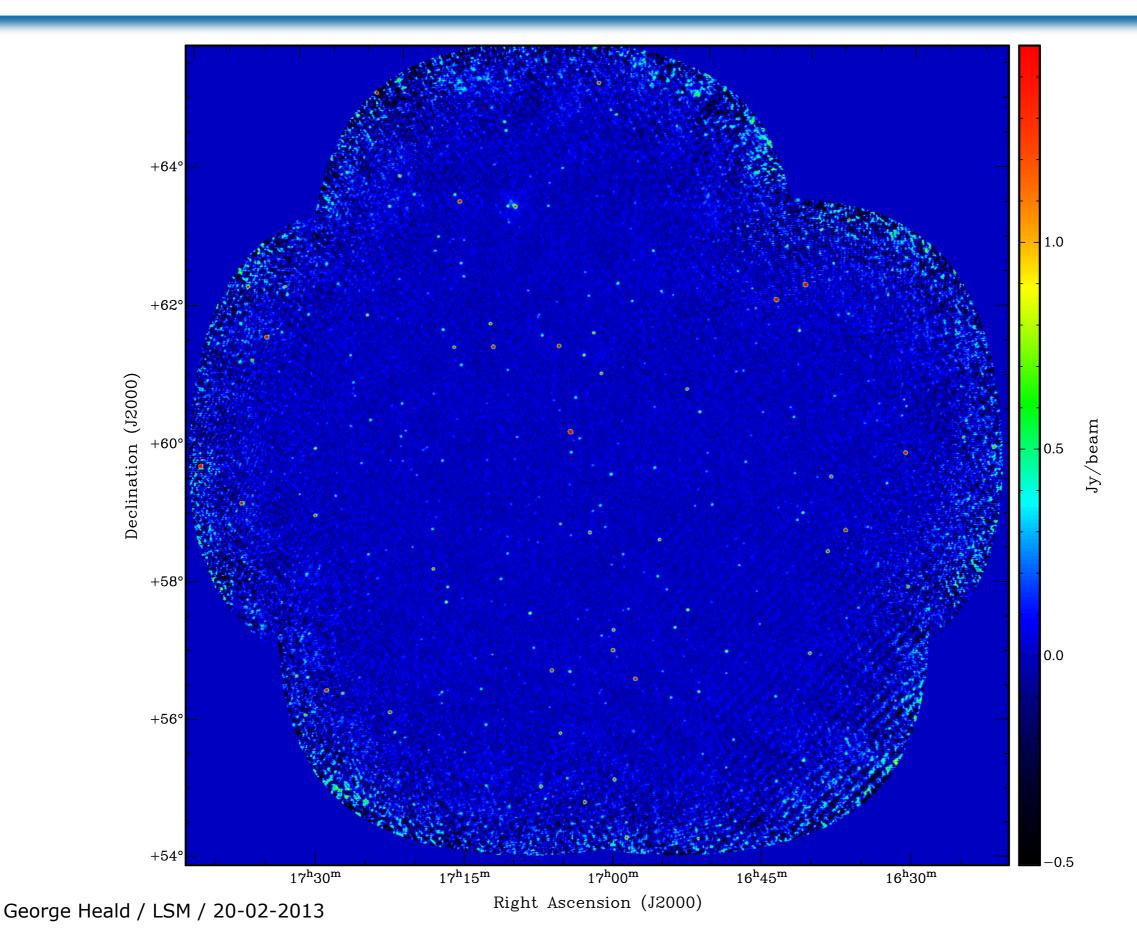
In this case HerA causing problems



George Heald / LSM / 20-02-2013

6

Image using only 2 MHz bandwidth **Image Using Only 2** MHz bandwidth





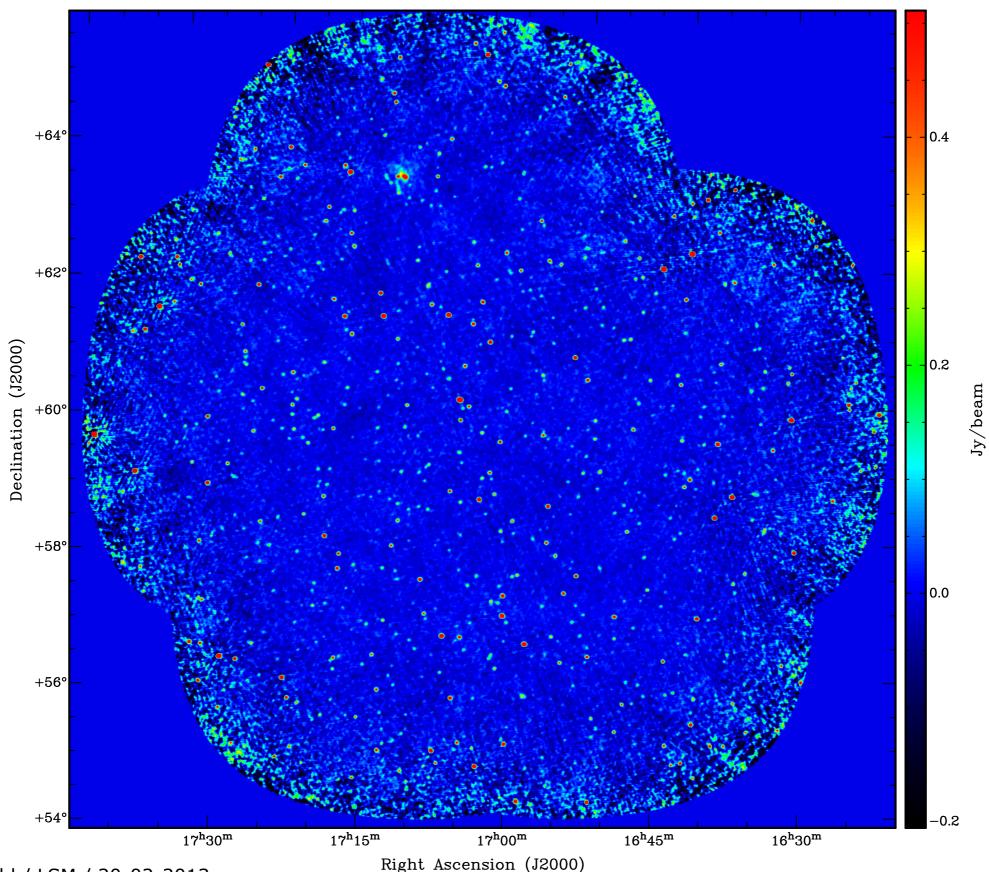
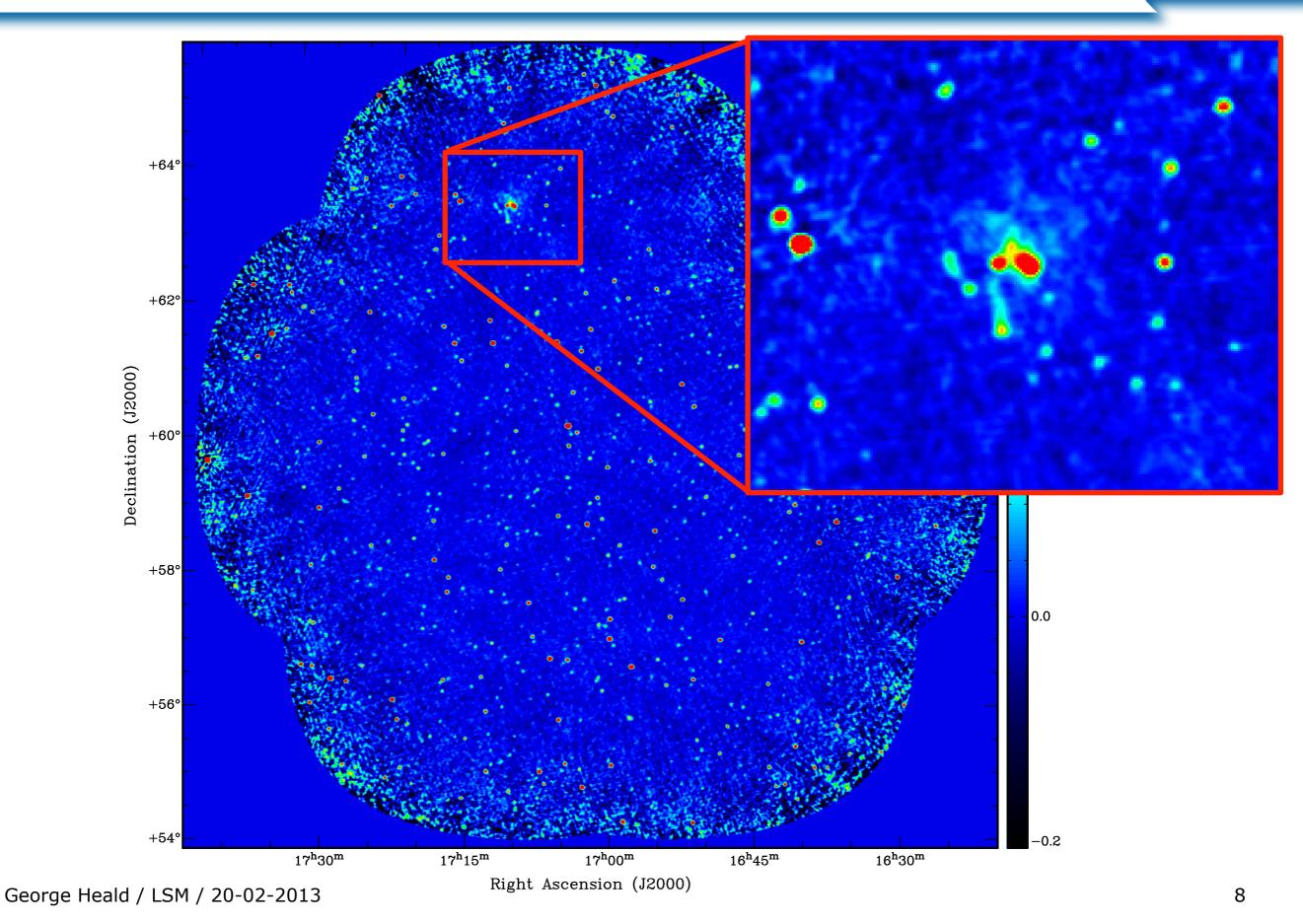


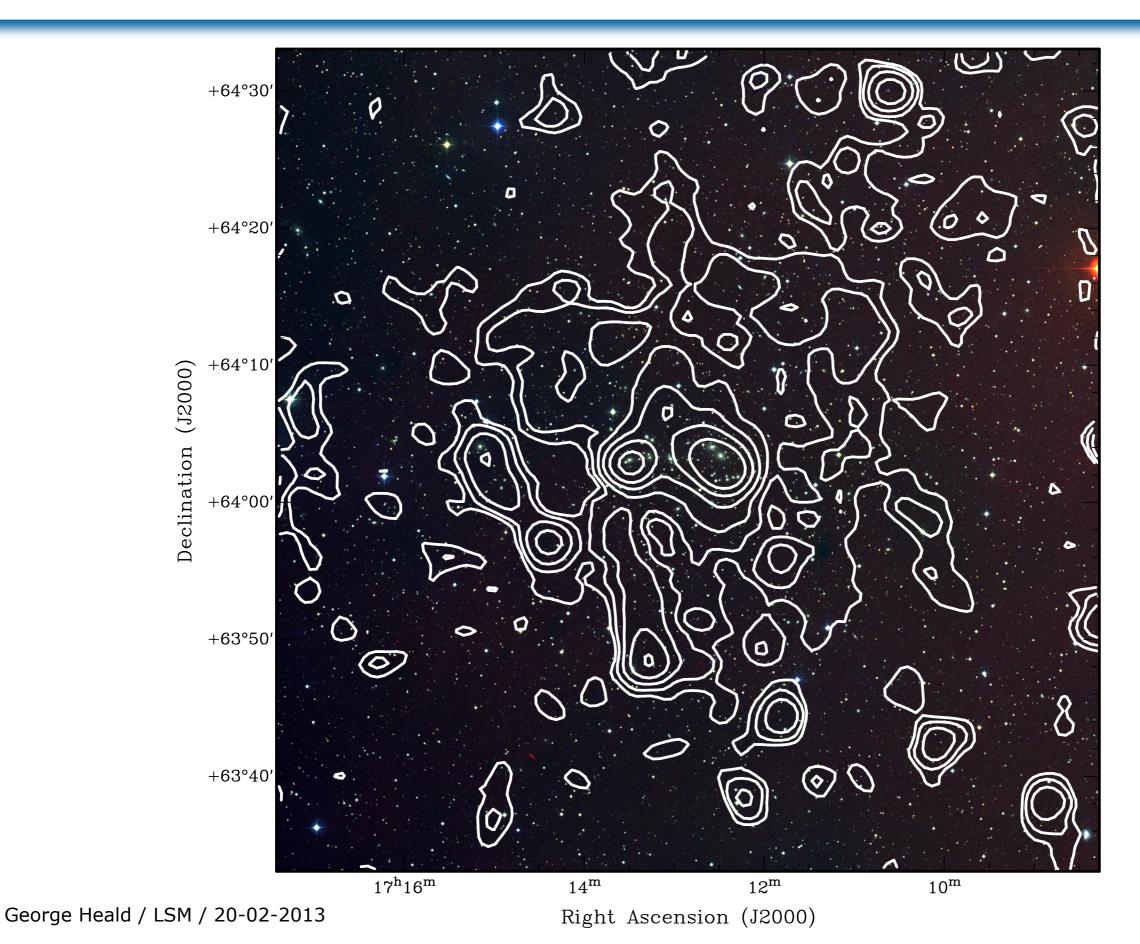
Image using all 16 MHz bandwidth **W**LOFAR AST(RON





That fuzzy thing: Abell 2255





MSSS-HBA: Abell 2255

cf Pizzo & de Bruyn (2009) WSRT, 150 MHz NW +64°30 +64°30′ Relic (J2000) +64°20 ٥ Declination (J2000) Halo Declination +64°00' +63°50′ 00 0 +63°40′ 0 17^h16^r 14^{m} Right Ascension (J2000) +63°30' 1 Mpc 17^h15^m 05^m 10^{m} Right Ascension (J2000)

LOFAR AST(RON

Next steps



- Continue producing images from ongoing MSSS-HBA observations
- Careful source flux/position assessment (ongoing this week)



Trace: » msss:roster » commissioning:start » msss:processed_data

Processed data and images

HBA

Please enter the information here as you process MSSS data.

Field names	Observed date	Processed date(s)	Worker	Data quality	Data location	Sources catalogued?	Comments
H225+61, H251+61, H260+61, H257+63, H257+58, H253+58	8 Feb 2013	13 Feb 2013	Heald	Excellent	locus002:/data/scratch/heald/hba-20130208/set01	No	includes A2255
H250+00, H248+00, H252+00, H250+02, H248+02, H252+02	8 Feb 2013	13 Feb 2013	Heald	Poor	locus002:/data/scratch/heald/hba-20130208/set02	No	corrupted by HerA; only band5 done so far
H240+07, H242+07, H237+07, H240+05, H239+10, H238+05	8 Feb 2013	13 Feb 2013	Heald, Bonafede	Good	locus002:/data/scratch/heald/hba-20130208/set03 and locus024:/data/scratch/bonafede/MSSS_week7/set03	No	all bands calibrated but only some bands imaged so far
H240+27, H242+22, H242+24, H242+27, H245+22, H245+24	8 Feb 2013	14 Feb 2013	Heald	Good	locus002:/data/scratch/heald/hba-20130208/set04	No	includes bright compact source PKS1607+26 (J160913+264129)
H253+48, H256+48, H254+46, H251+51, H255+51, H258+46	8 Feb 2013	14 Feb 2013	Bonafede	?	locus083:/data/scratch/bonafede/MSSS_week7/hba- 20130208/set05	No	all bands calibrated, some imaging but no mosaics yet [edit]

[edit]