

LOFAR MSSS

Multifrequency Snapshot Sky Survey

Progress Update

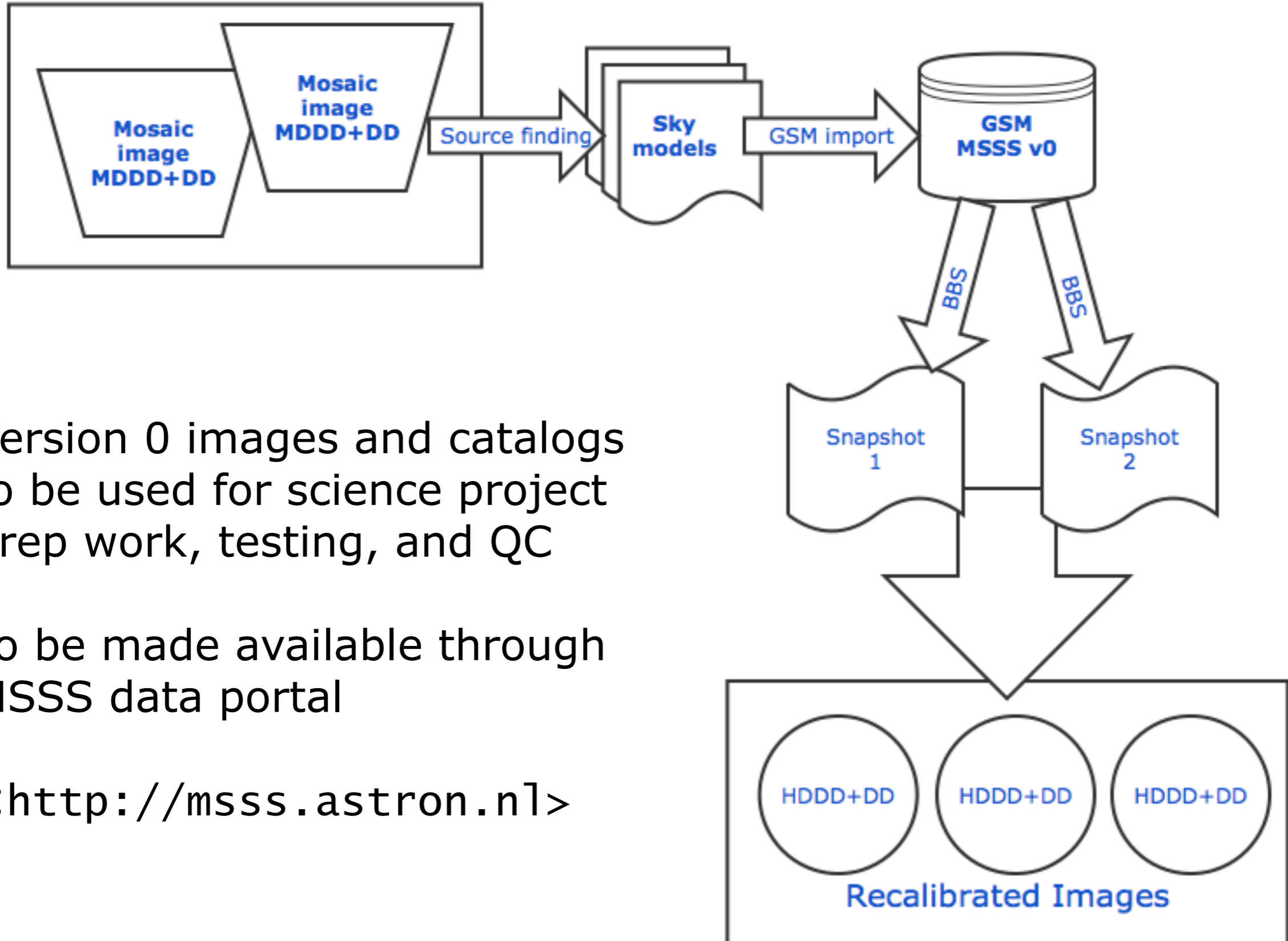
George Heald (MSSS Project Leader)
(on behalf of the MSSS Team)
LSM, 30/04/2014



- MSSS-HBA is now nearly complete!
- Most “master mosaics” already prepared (Thanks to Alex!)
- Remaining 13 fields now scheduled for the coming week: (Thanks to Michiel!)

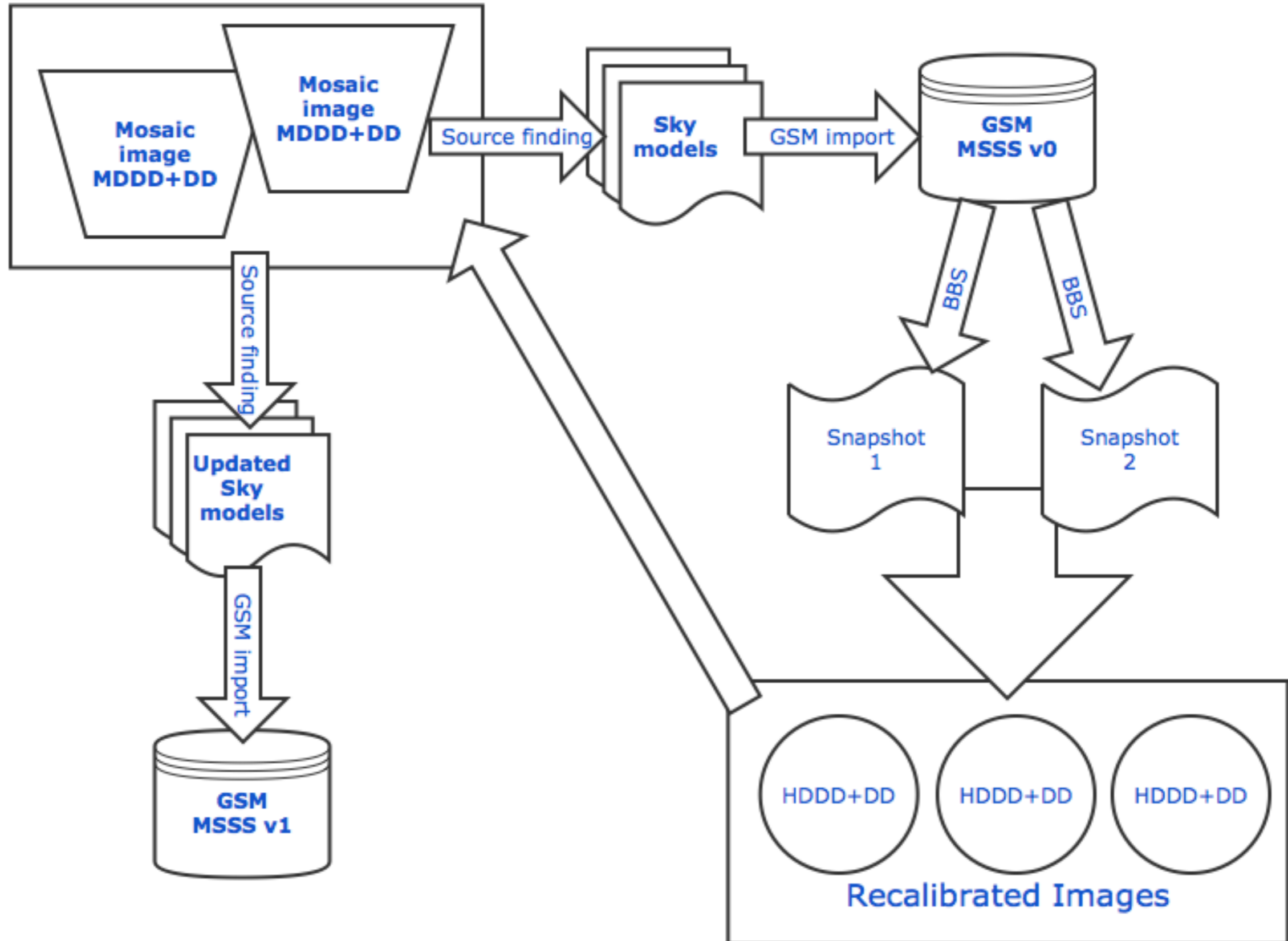
Week 19	day	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	ROCR Duty	
Approximate LST		15	16	17	18	19	20	21	22	23	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
May	5	Mon	LC1_045 - UGC09555 - 7hrs		LC1_035 - Monthly LST 16-19			Stress system runs	LC0_035 - M31 - 4hrs																LC0_035 - RX J1308.6+2127 - 3hrs	-	
	6	Tue	LC1_035 - RRAT J1537+23 - 1hr		LC1_023 - LSTs 16,18	LC1_023 - S9433 - 2x0.5hrs		Stop Day												LC1_035 - Monthly LST 08-09						LC1_046 - NGC5775 - 5hrs	RAF
	7	Wed	LC1_046 - NGC5775 - 5hrs		LC1_003 pulsars						TESTS ROLL OUT (ARNO)						LC1_041 -2FGL J0843.6+6715 - 4hrs							LC1_046 - NGC5775 - 5hrs	CT		
	8	Thu	LC1_046 - NGC5775 - 5hrs		LC1_023 - LSTs 16,18				LC1_023 - LSTs 22			LC1_023 - LSTs 02,07	TESTS ROLL OUT (ARNO)											LC1_047 A2255 -9 hrs		CT	
	9	Fri	LC1_047 A2255 -9 hrs						LC1_035 - 3xRRATs - 3x1hr								MSSS			MSSS until 18:55	LC1_035 - pulsar repeats			MSSS		LC1_035 - pulsar repeats	RAF
	10	Sat		LC1_035 - pulsar repeats	MSSS intermittently until 09:35				LC1_025 - Sun - 6hrs														MSSS				(CT)
	11	Sun	MSSS	LC1_003 pulsars						LC1_025 - Sun - 5.25hrs																	

- LBA tests now ongoing, testing flanking field setup [David Rafferty] and NCP monitoring scheme [Adam Stewart] (Thanks to Carmen!)

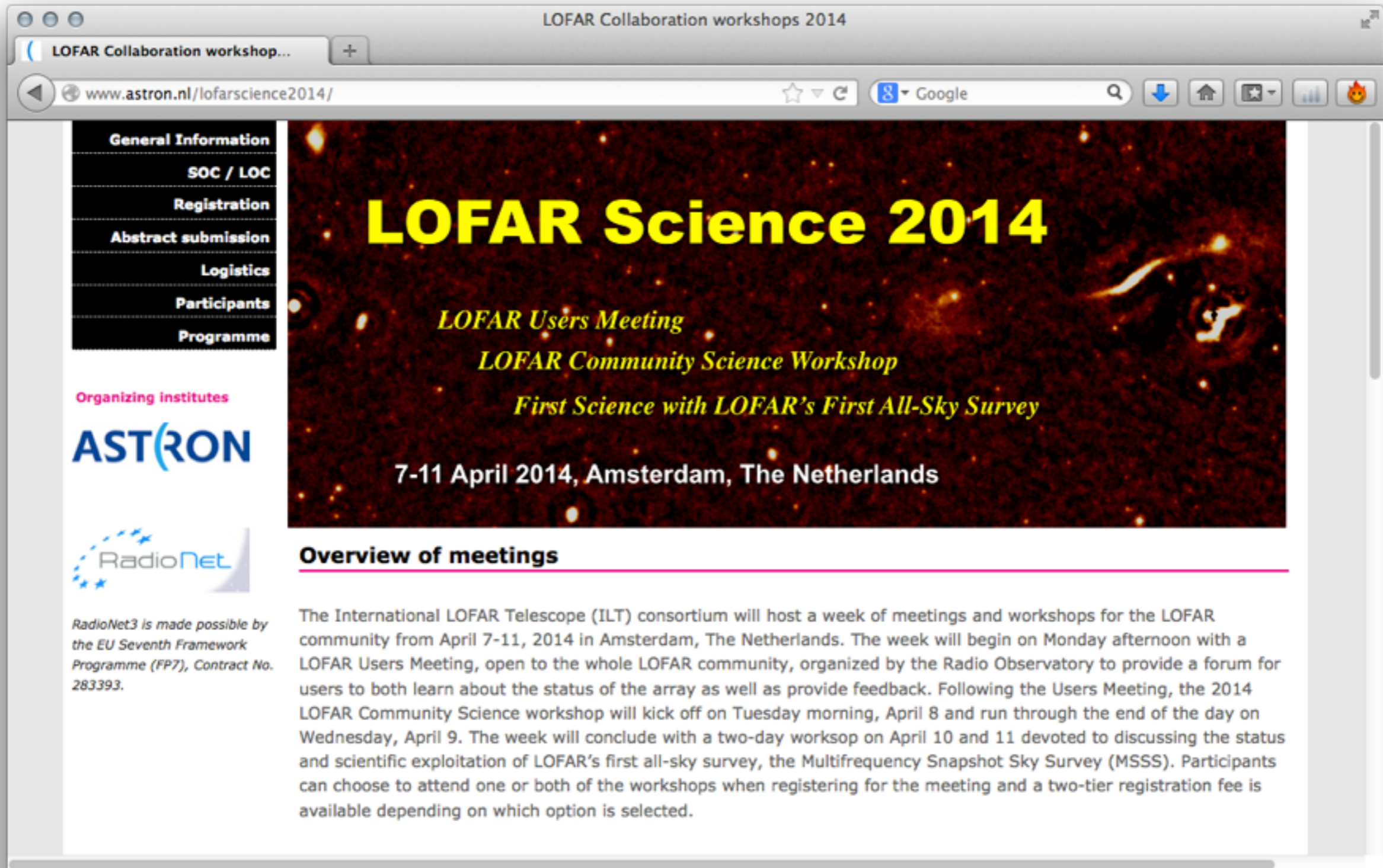


- Version 0 images and catalogs to be used for science project prep work, testing, and QC
- To be made available through MSSS data portal

`<http://msss.astron.nl>`



- MSSS science meeting in Amsterdam: 10-11 April 2014



The screenshot shows a web browser window with the title "LOFAR Collaboration workshops 2014". The address bar shows "www.astron.nl/lofarscience2014/". The page features a navigation menu on the left with items: General Information, SOC / LOC, Registration, Abstract submission, Logistics, Participants, and Programme. Below the menu are logos for "Organizing institutes" including ASTRON and RadioNet. The main content area has a dark background with a starry field and a bright object. The text reads: "LOFAR Science 2014", "LOFAR Users Meeting", "LOFAR Community Science Workshop", "First Science with LOFAR's First All-Sky Survey", and "7-11 April 2014, Amsterdam, The Netherlands". Below this is a section titled "Overview of meetings" with a pink underline. The text describes the week of meetings and workshops for the LOFAR community from April 7-11, 2014, in Amsterdam, The Netherlands. It details the LOFAR Users Meeting, the 2014 LOFAR Community Science workshop, and the Multifrequency Snapshot Sky Survey (MSSS).

General Information
SOC / LOC
Registration
Abstract submission
Logistics
Participants
Programme

Organizing institutes
ASTRON
RadioNet

RadioNet3 is made possible by the EU Seventh Framework Programme (FP7), Contract No. 283393.

LOFAR Science 2014

LOFAR Users Meeting
LOFAR Community Science Workshop
First Science with LOFAR's First All-Sky Survey

7-11 April 2014, Amsterdam, The Netherlands

Overview of meetings

The International LOFAR Telescope (ILT) consortium will host a week of meetings and workshops for the LOFAR community from April 7-11, 2014 in Amsterdam, The Netherlands. The week will begin on Monday afternoon with a LOFAR Users Meeting, open to the whole LOFAR community, organized by the Radio Observatory to provide a forum for users to both learn about the status of the array as well as provide feedback. Following the Users Meeting, the 2014 LOFAR Community Science workshop will kick off on Tuesday morning, April 8 and run through the end of the day on Wednesday, April 9. The week will conclude with a two-day workshop on April 10 and 11 devoted to discussing the status and scientific exploitation of LOFAR's first all-sky survey, the Multifrequency Snapshot Sky Survey (MSSS). Participants can choose to attend one or both of the workshops when registering for the meeting and a two-tier registration fee is available depending on which option is selected.

rodehoed



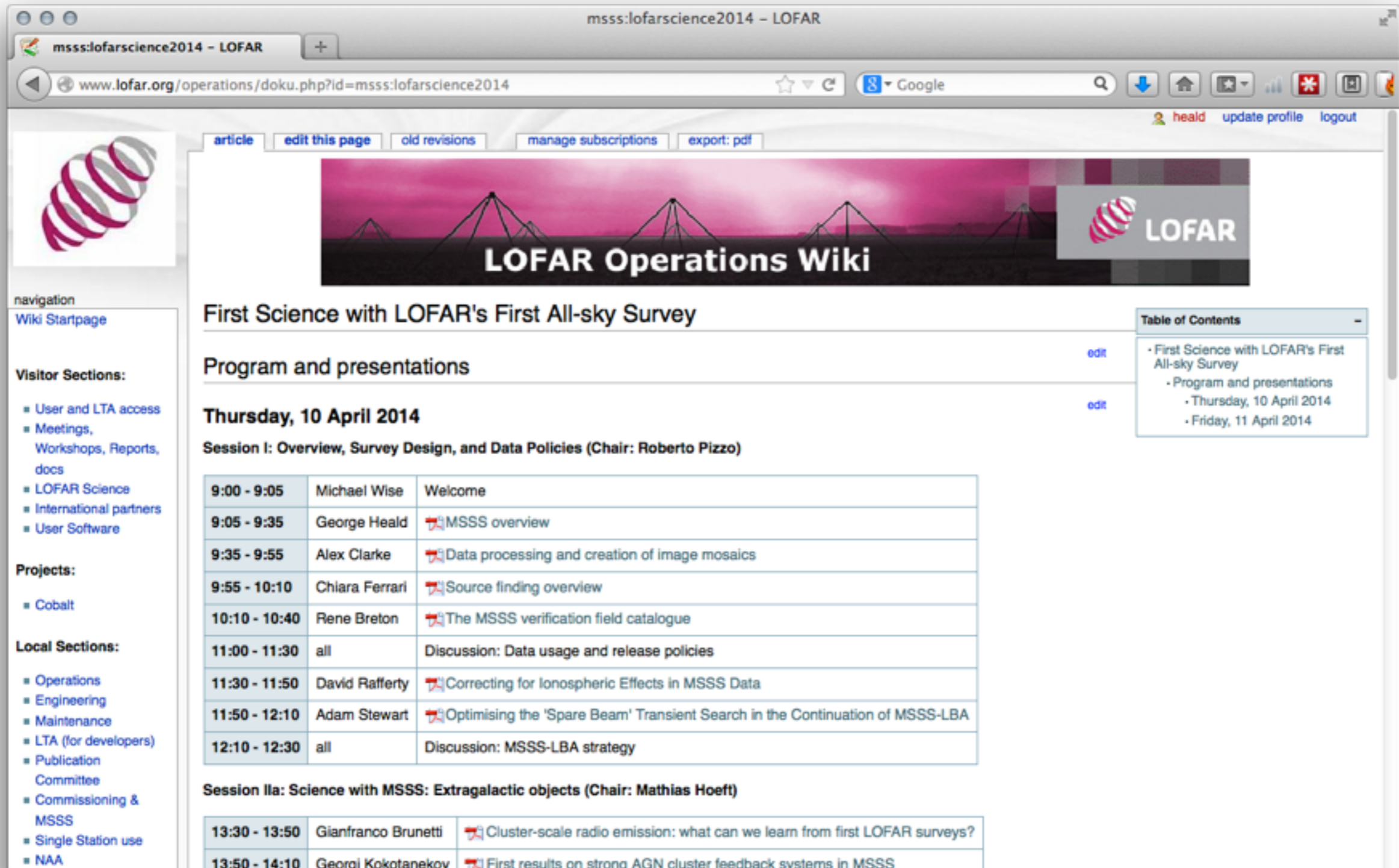
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Outcomes from the MSSS workshop:

- Many exciting preliminary results!
 - Both from initial data & reprocessed data
 - Broad range of science topics!
- Discussions on working groups and publications
- Convergence on priorities



- MSSS science meeting slides available on the LOFAR wiki:



The screenshot shows a web browser window displaying the LOFAR Operations Wiki page for the MSSS meeting. The page title is "First Science with LOFAR's First All-sky Survey". The main content area is titled "Program and presentations" and lists the schedule for Thursday, 10 April 2014. The schedule is divided into two sessions: Session I (Overview, Survey Design, and Data Policies) and Session IIa (Science with MSSS: Extragalactic objects). A table of contents on the right side of the page lists the main sections and their sub-sections.

LOFAR Operations Wiki

First Science with LOFAR's First All-sky Survey

[edit](#)

Program and presentations

[edit](#)

Thursday, 10 April 2014

Session I: Overview, Survey Design, and Data Policies (Chair: Roberto Pizzo)

9:00 - 9:05	Michael Wise	Welcome
9:05 - 9:35	George Heald	MSSS overview
9:35 - 9:55	Alex Clarke	Data processing and creation of image mosaics
9:55 - 10:10	Chiara Ferrari	Source finding overview
10:10 - 10:40	Rene Breton	The MSSS verification field catalogue
11:00 - 11:30	all	Discussion: Data usage and release policies
11:30 - 11:50	David Rafferty	Correcting for Ionospheric Effects in MSSS Data
11:50 - 12:10	Adam Stewart	Optimising the 'Spare Beam' Transient Search in the Continuation of MSSS-LBA
12:10 - 12:30	all	Discussion: MSSS-LBA strategy

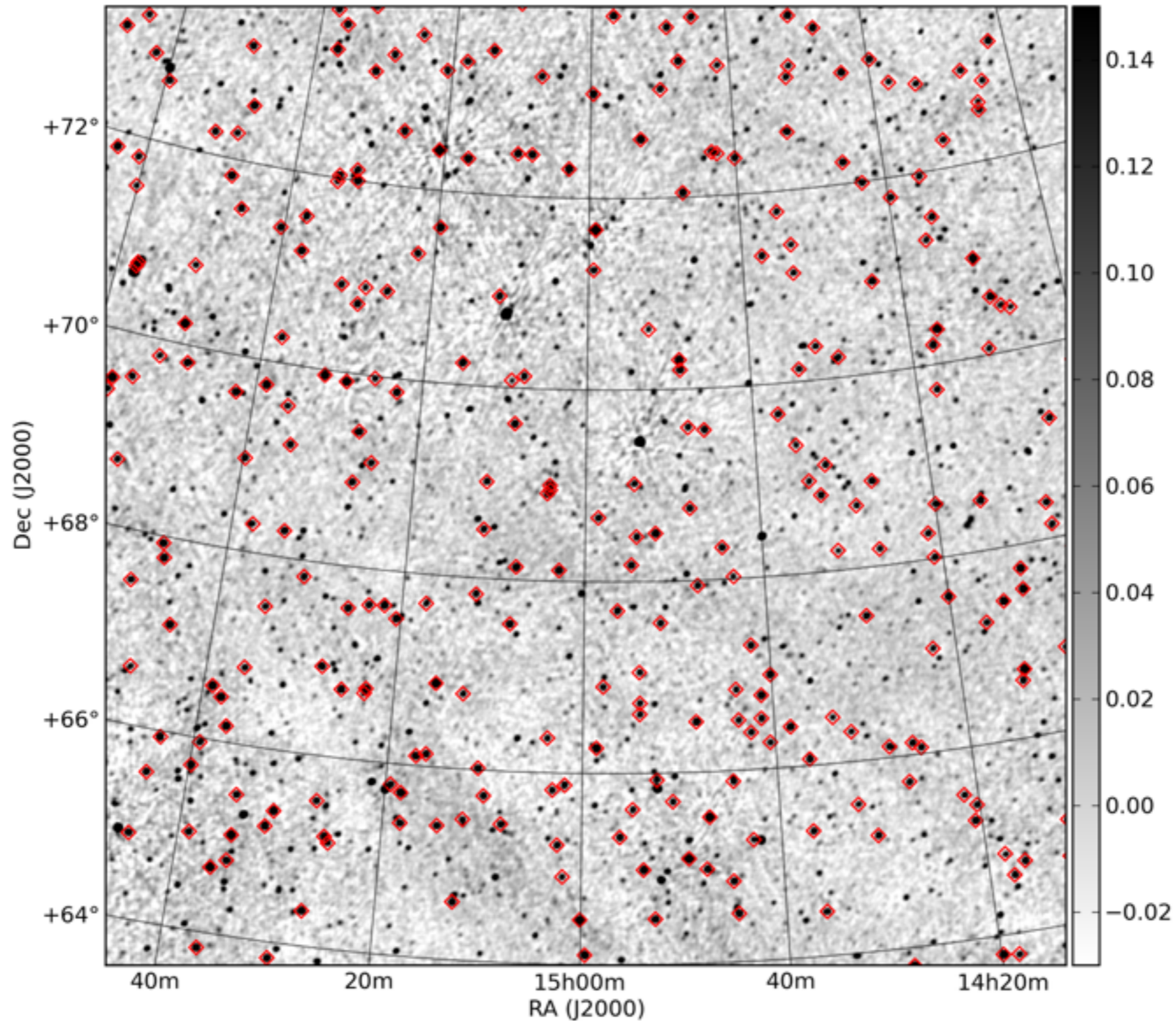
Session IIa: Science with MSSS: Extragalactic objects (Chair: Mathias Hoefft)

13:30 - 13:50	Gianfranco Brunetti	Cluster-scale radio emission: what can we learn from first LOFAR surveys?
13:50 - 14:10	Georgi Kokotanekov	First results on strong AGN cluster feedback systems in MSSS

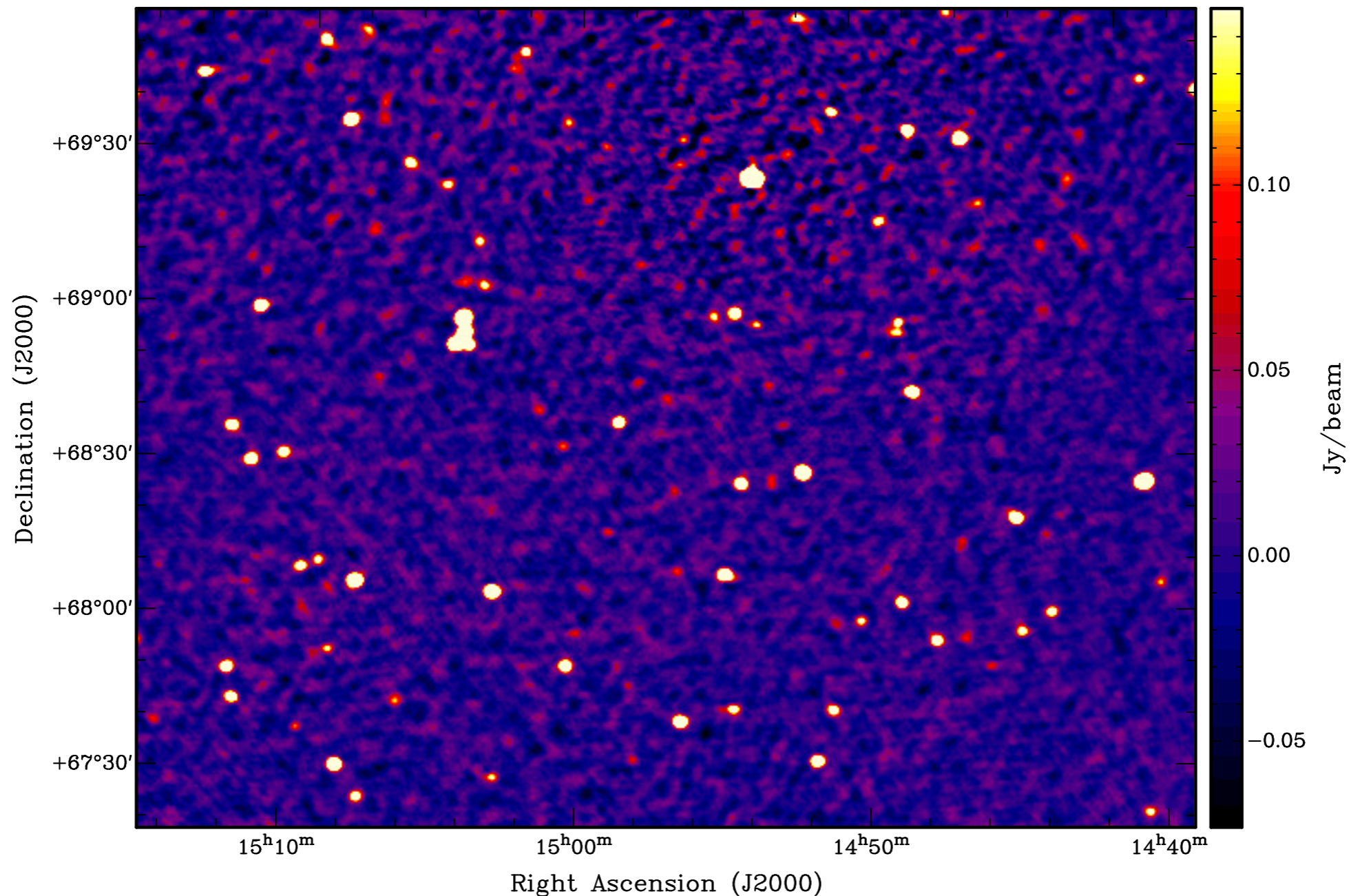
Table of Contents

- First Science with LOFAR's First All-sky Survey
- Program and presentations
 - Thursday, 10 April 2014
 - Friday, 11 April 2014

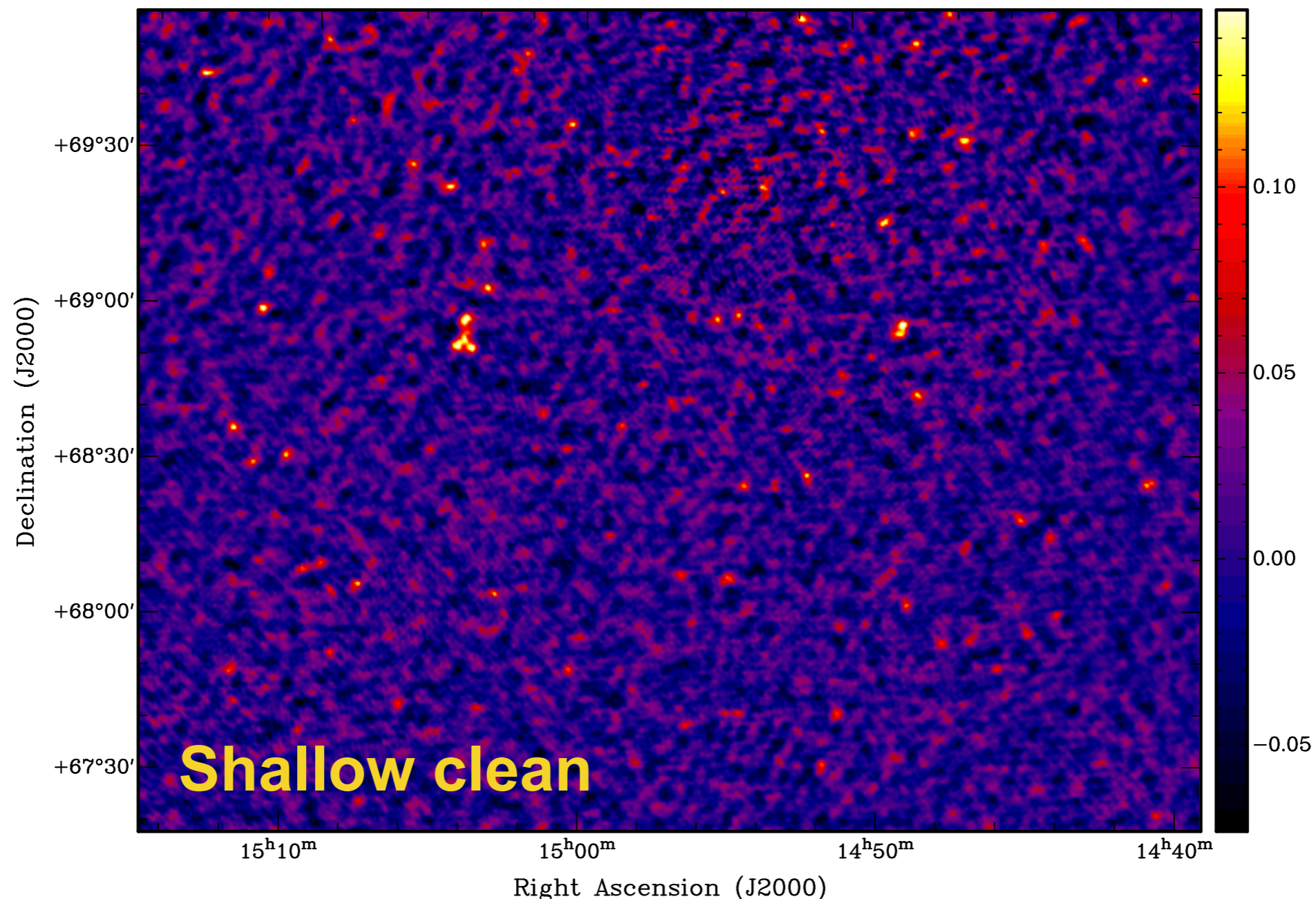
- Fields initially imaged with standard MSSS steps, then recalibrated



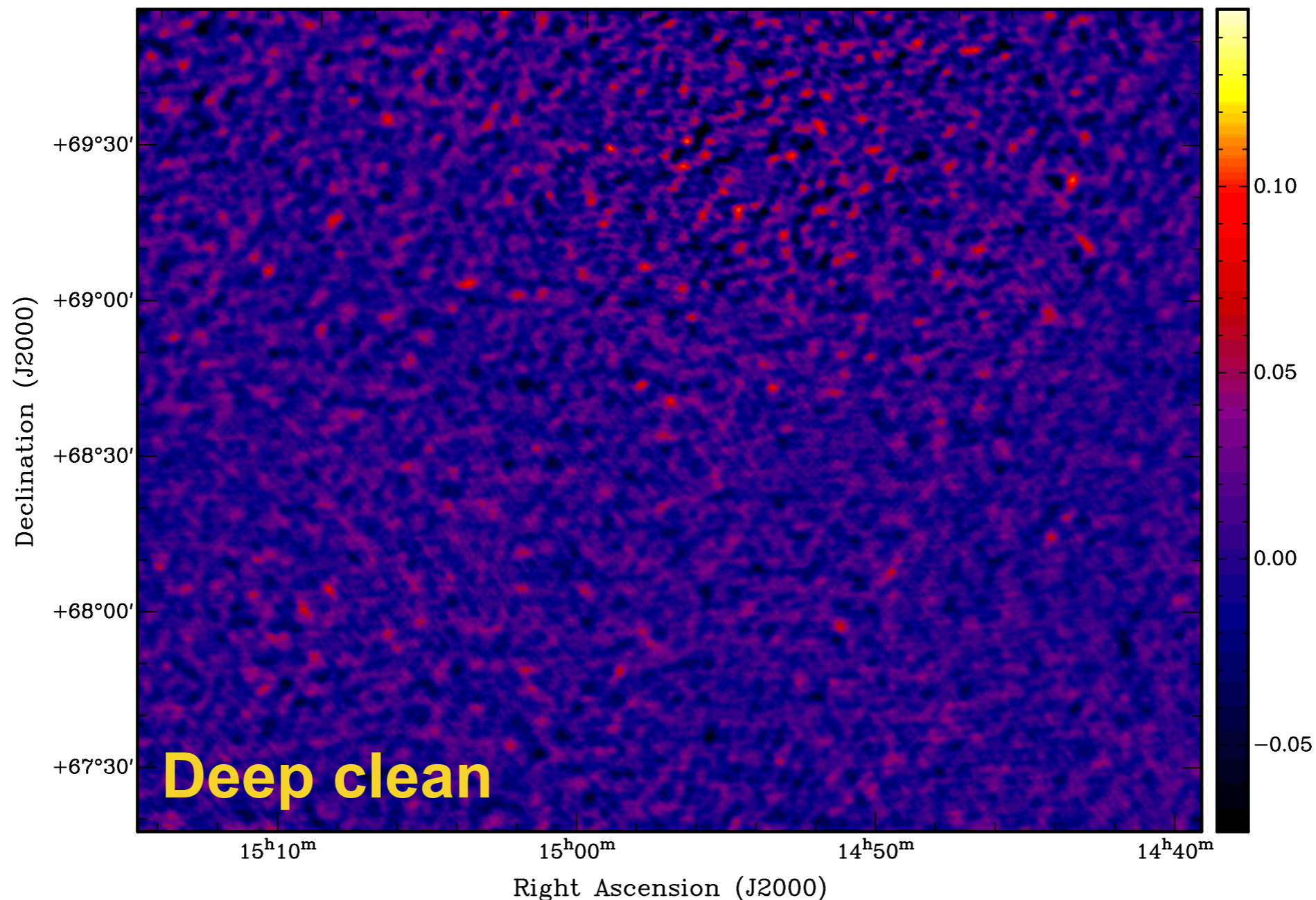
- In-band HBA spectral indices are far too steep in general
 - Same holds for sources in other fields (see Amsterdam talks)
- What can be the cause? Possible culprit: incomplete deconvolution



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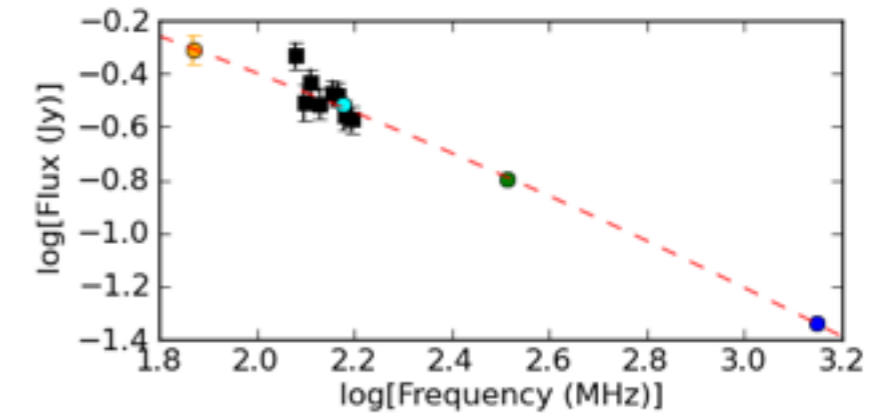
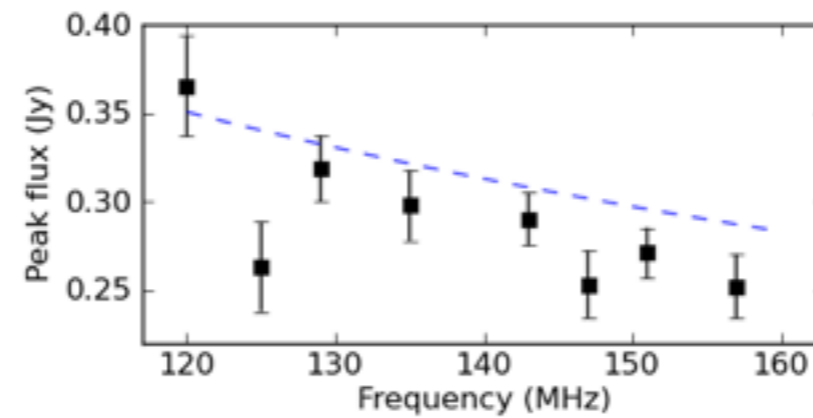
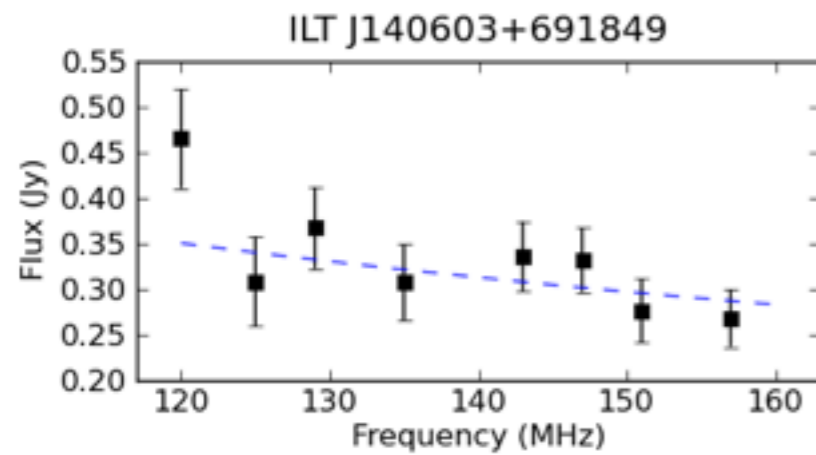
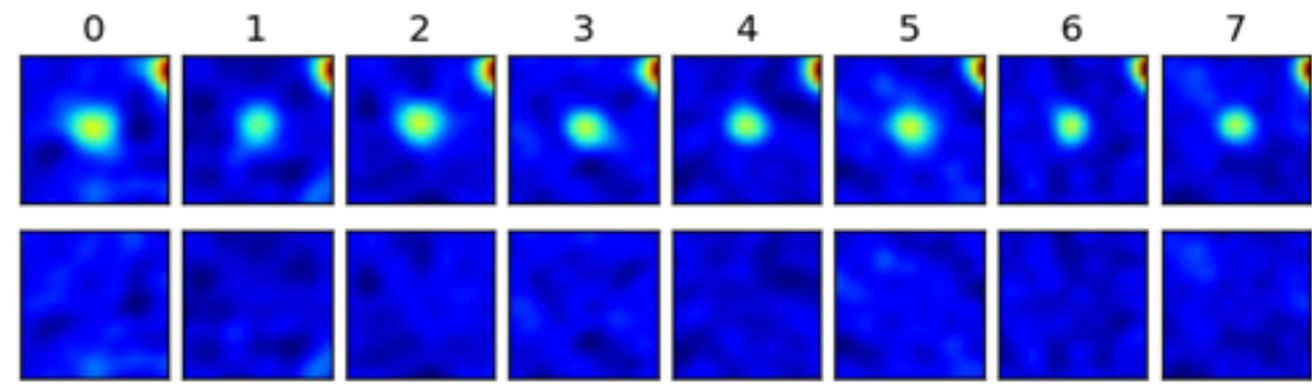
- In-band HBA spectral indices are far too steep in general
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- What can be the cause? Possible culprit: incomplete deconvolution



- Steps taken so far:
 - Initially processed data, shallow clean (SET1)
 - Selfcal data, shallow clean (SET2)
Produced thanks to [Martin Hardcastle](#)
NB: Report on selfcal procedure on MSSS wiki (2013w28)
 - Selfcal data, deep clean & tile fix (SET3)
Produced thanks to [Wojtek Jurusik](#)
NB: Report on deep clean procedure on MSSS wiki (2014w16)
- Source finding done consistently for all three cases
Thanks to [Georgi Kokotanekov](#)
- Plotting done consistently for all three cases
Thanks to [Sjoert van Velzen](#)

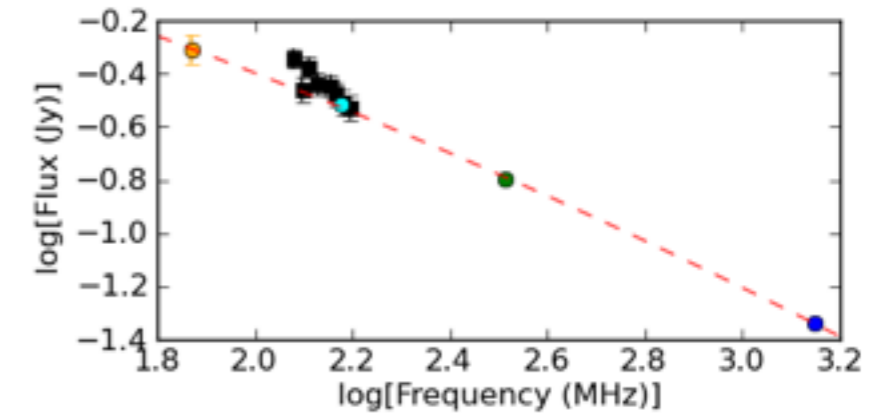
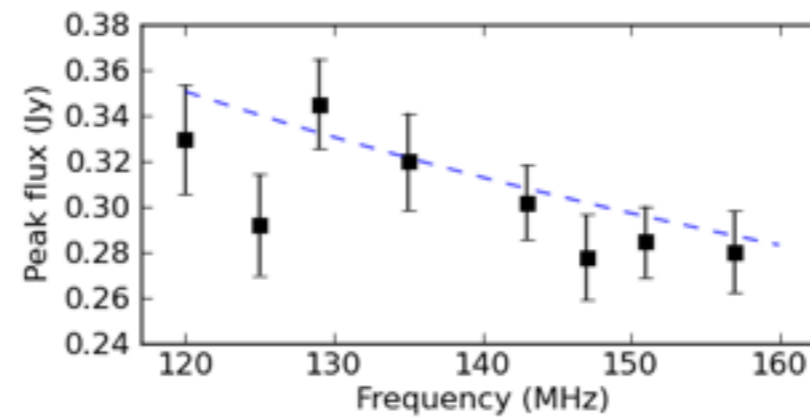
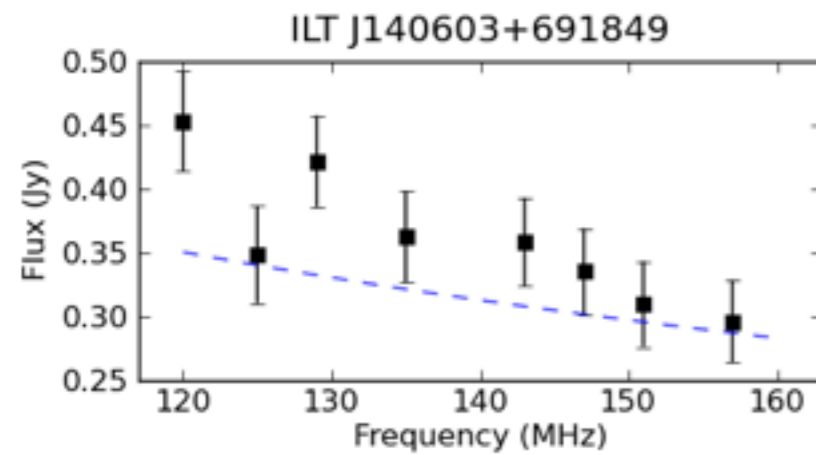
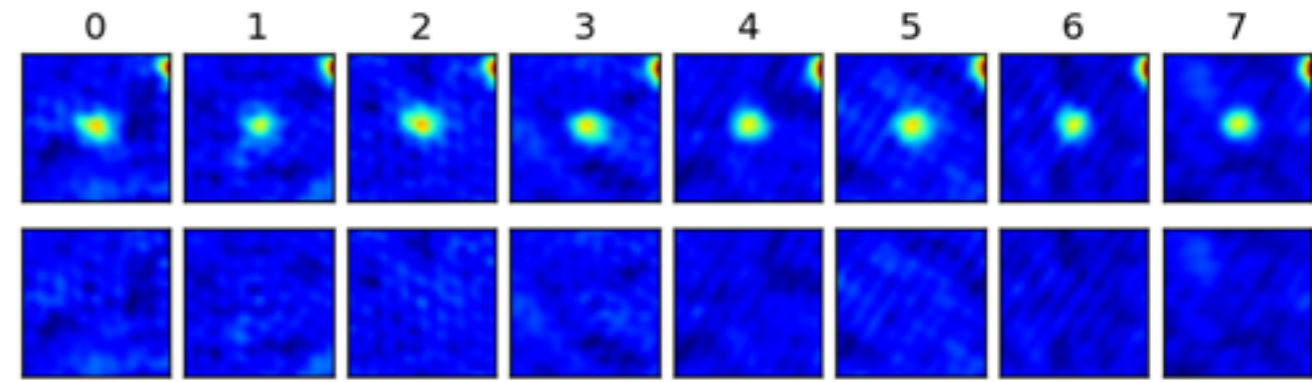
- J140603+691849

SET1



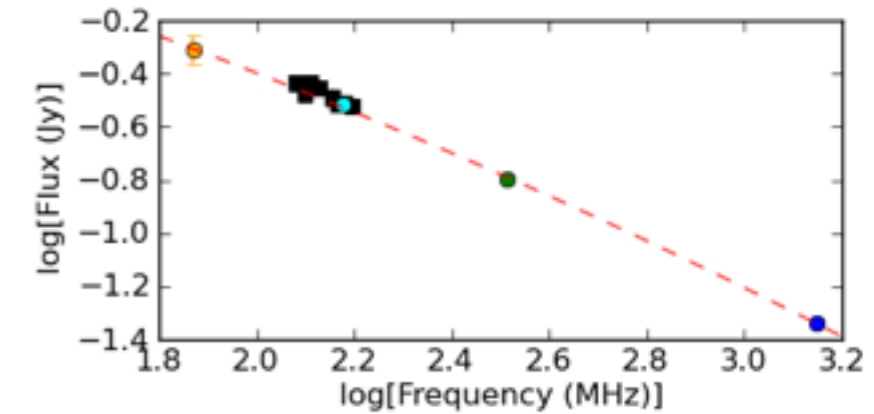
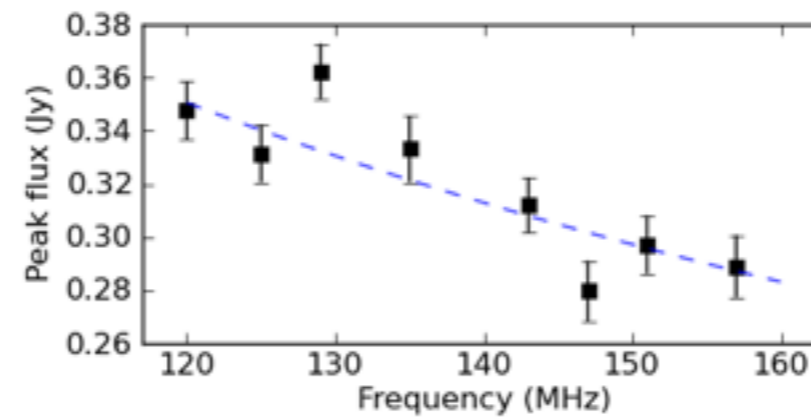
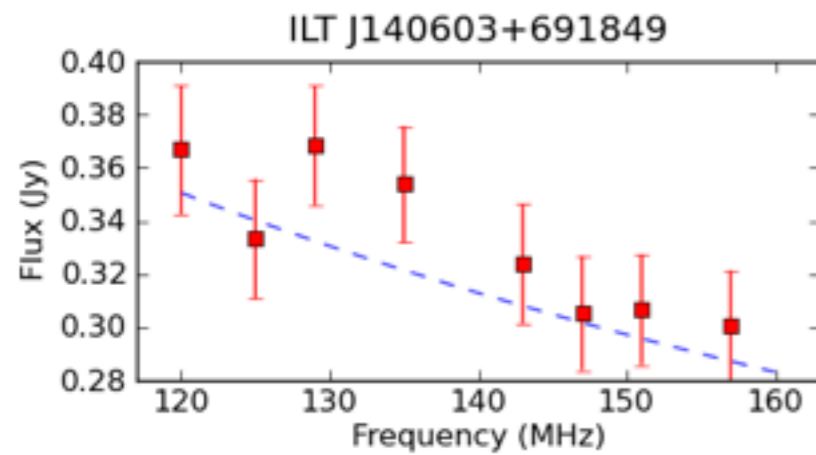
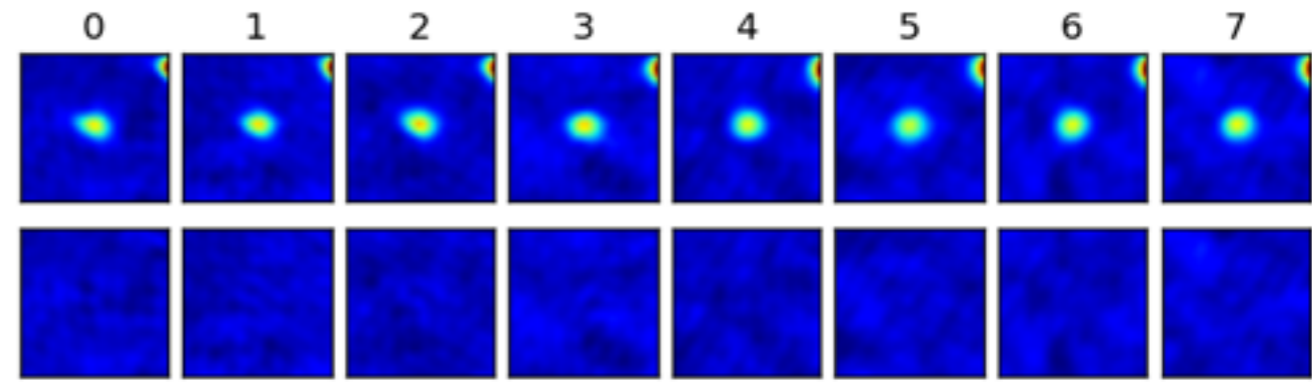
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SET2



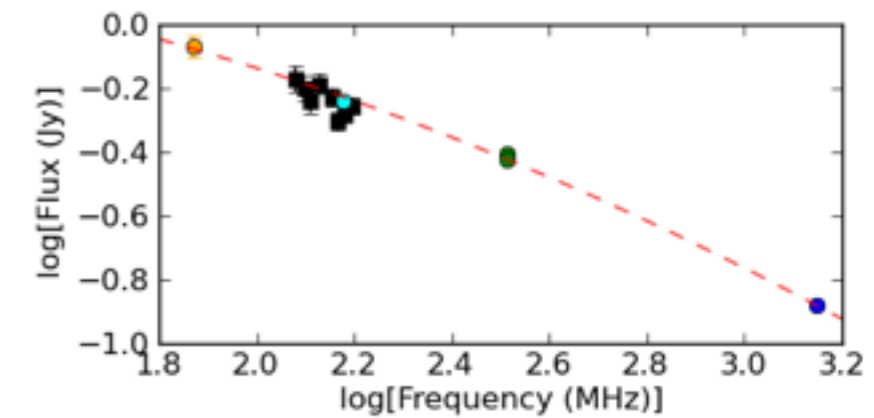
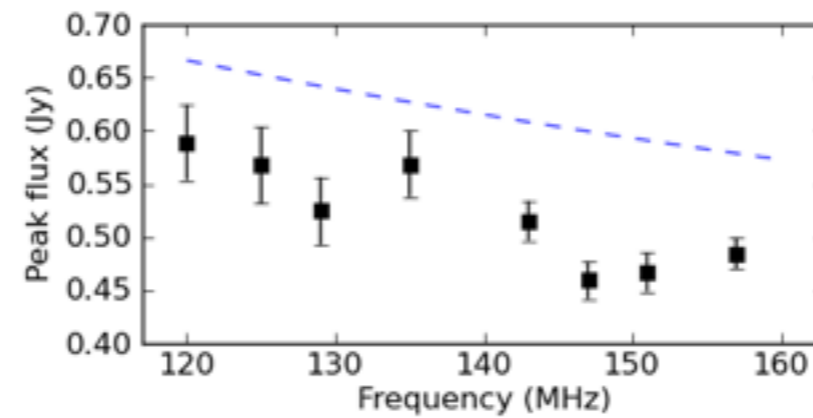
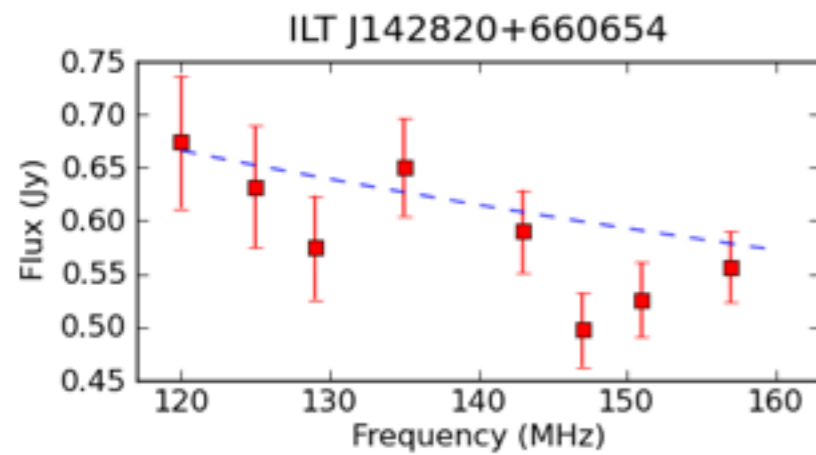
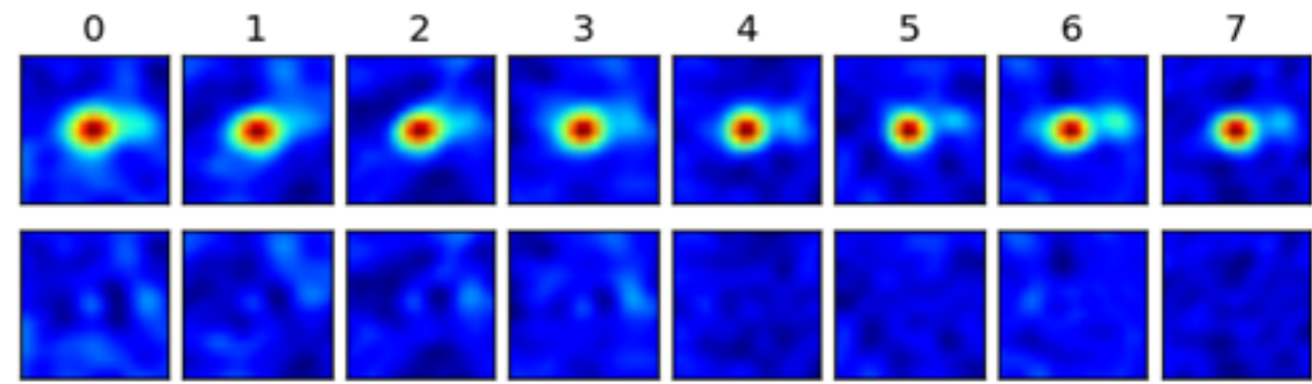
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SET3



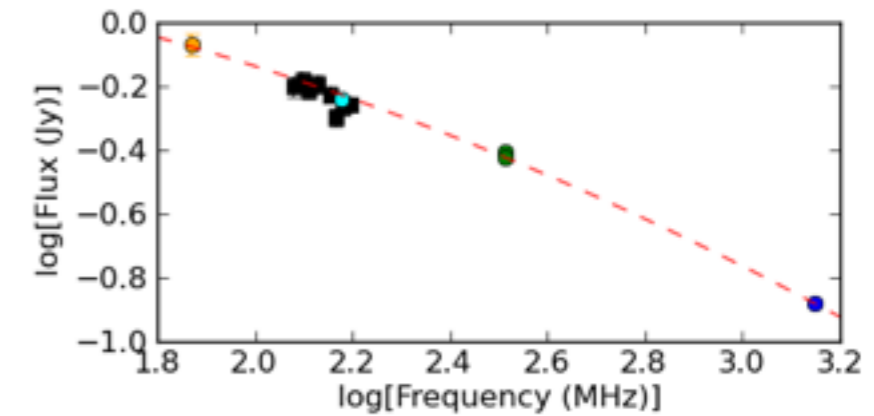
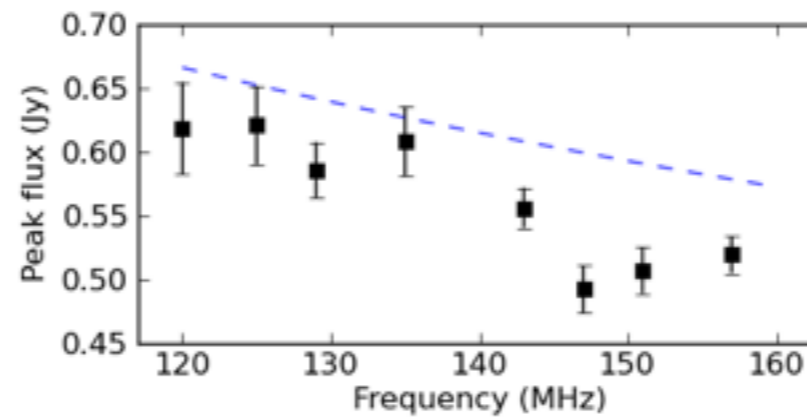
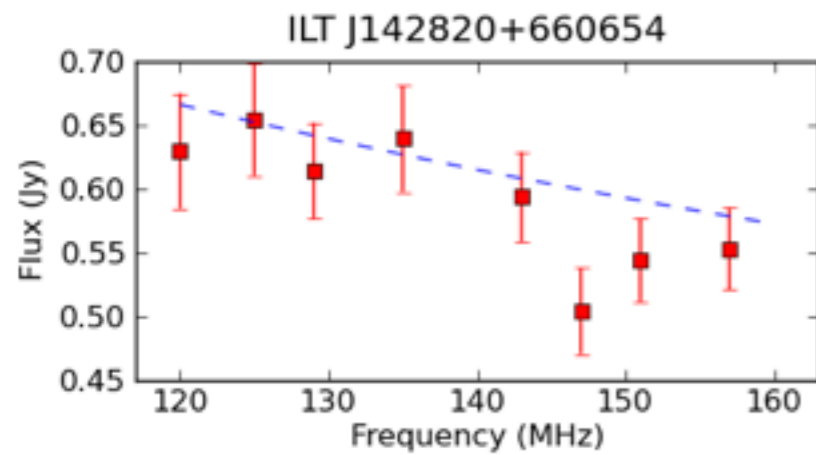
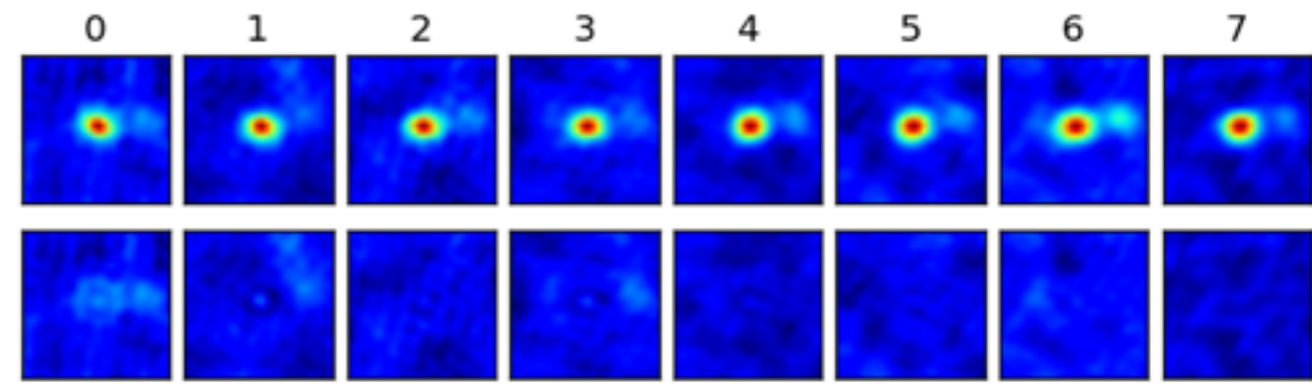
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SET1



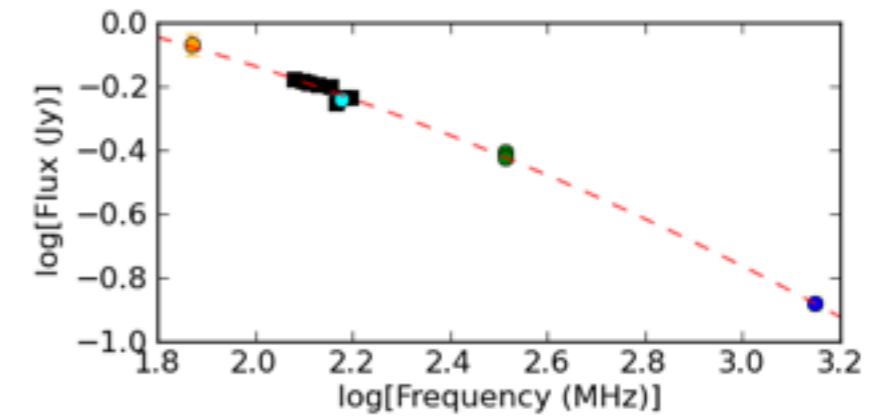
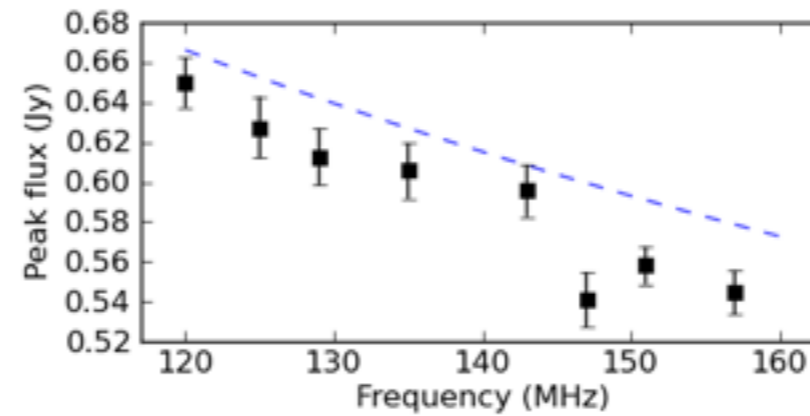
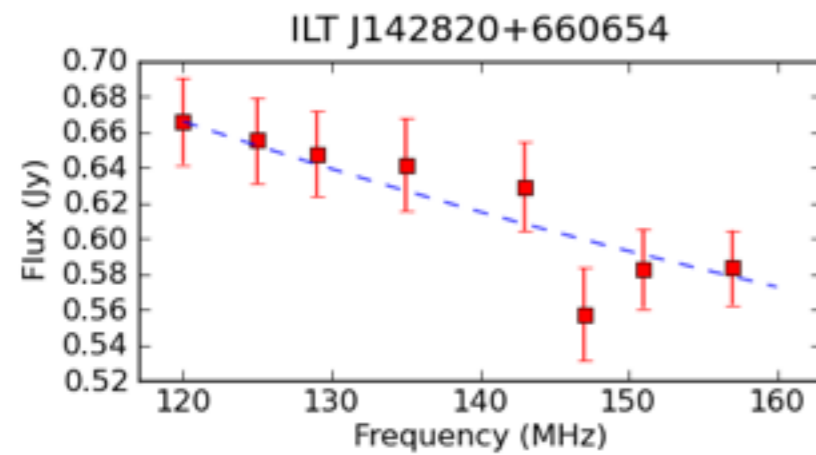
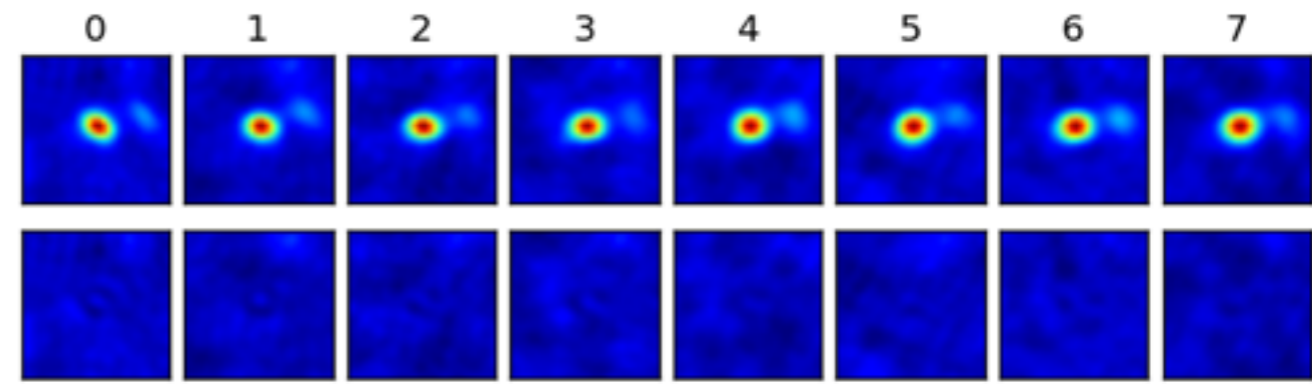
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SET2

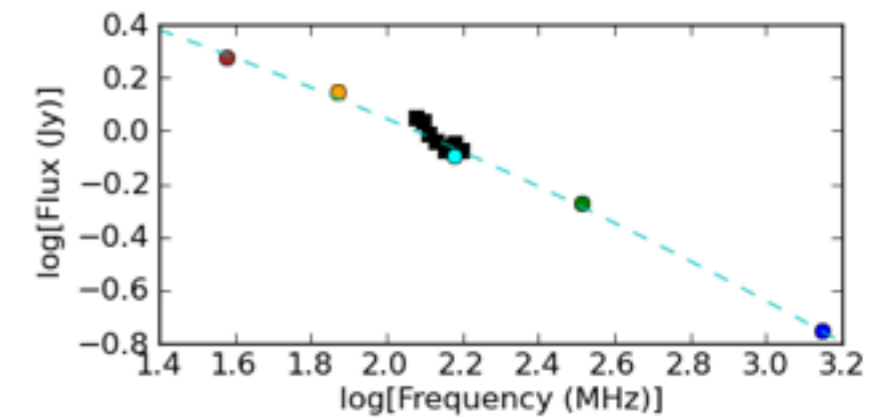
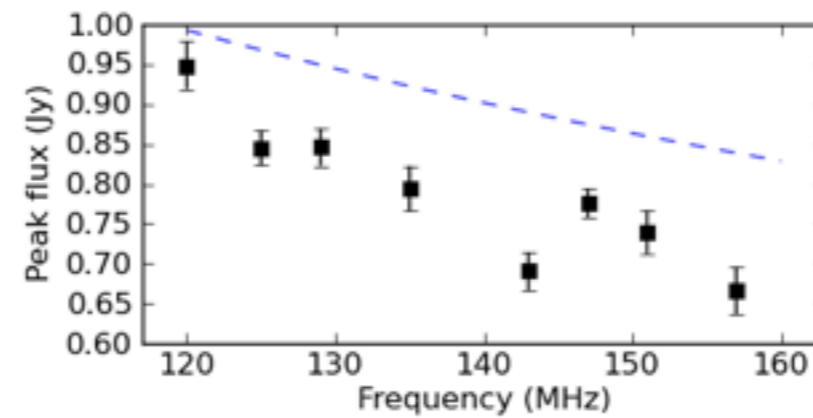
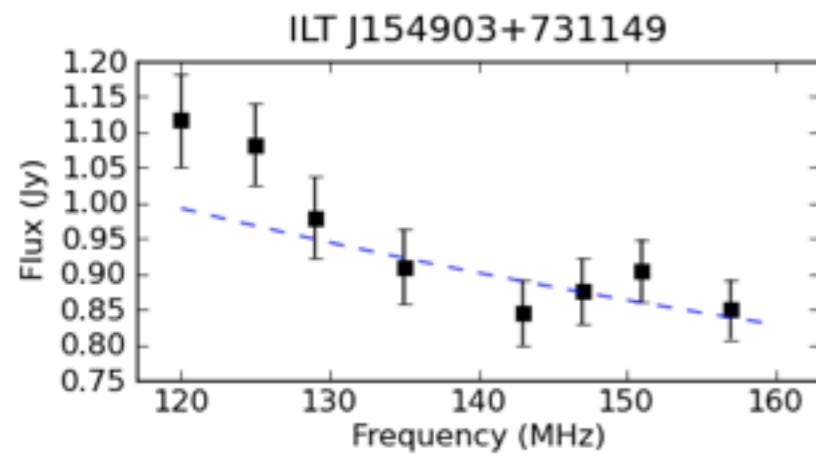
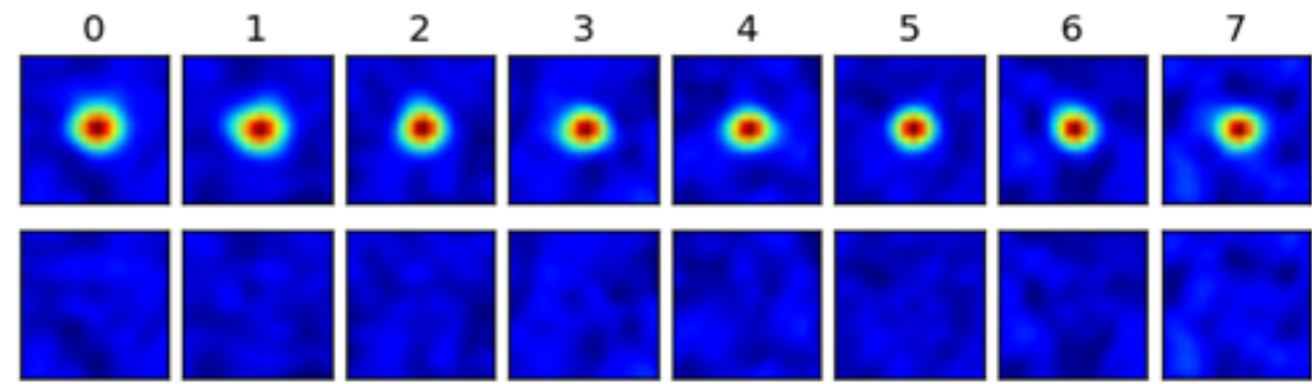


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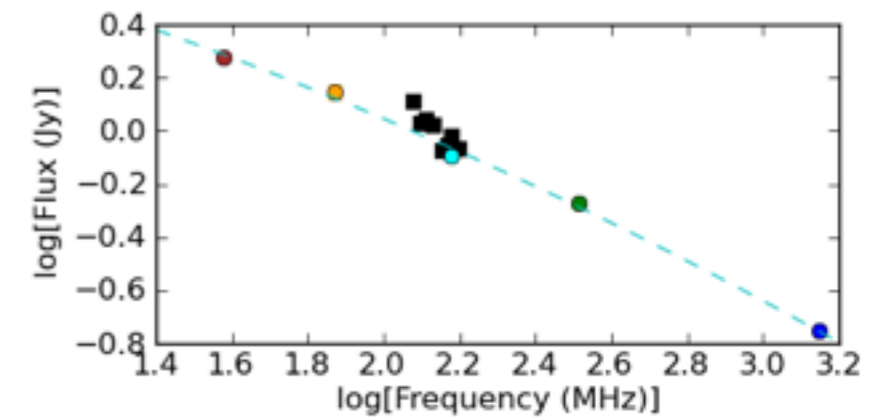
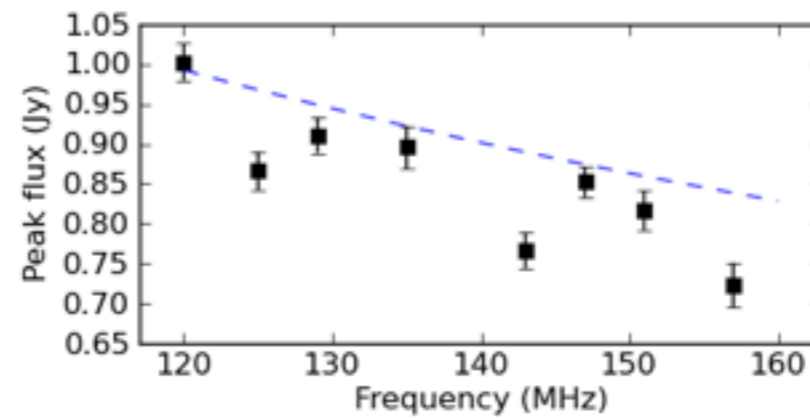
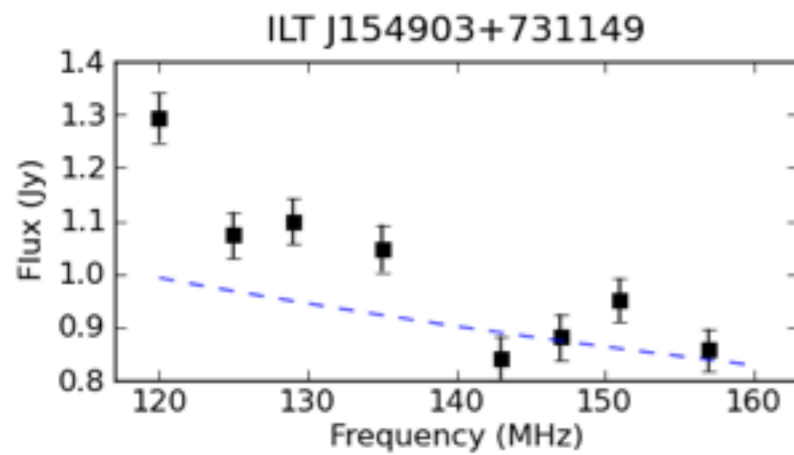
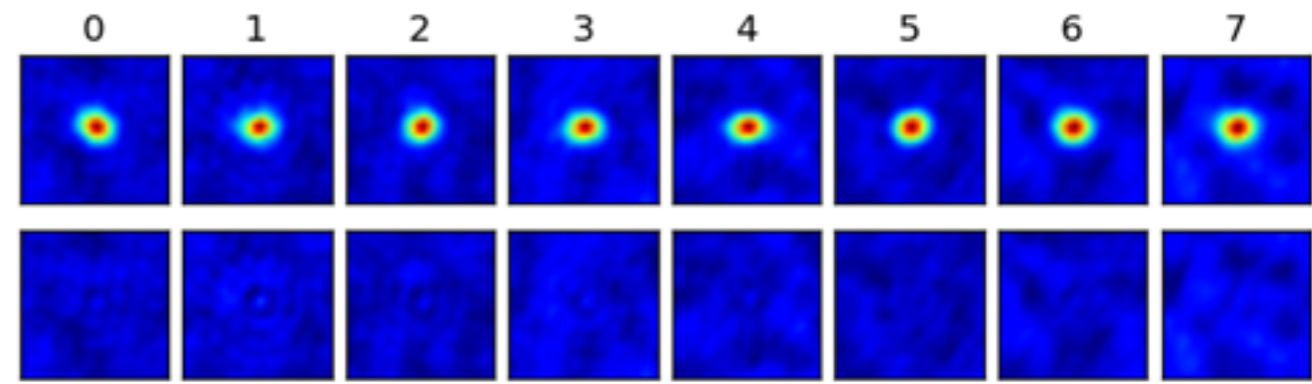
SET3



SET1



SET2



SET3

