

# spirehizsag1 | CompactSourceExtractionWorkingGroup

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## SPIRE Cross-SAG Compact Source Extraction Working Group.

### General Statement of purpose

This group was set up by the SPIRE co-Is with the following guidance...

Especially relevant to SAGs 1, 2, 3

basic robust point source extraction routine is to be developed and implemented by the SPIRE ICC. The work of this group will be to go beyond that.

### Draft Aims

Our first job is to define more concrete aims

\*This is a draft of the requirements for the cross-SAG compact source extraction working group. This is currently very provisional and should be regarded as no more than a starting point for discussion!\*

#### 1. Source Detection Algorithms

Survey of what's out there - including status and tests of publically available codes.

#### 2. Figures of Merit

What do we want to know, how will we measure it

#### 3. Format issue

What do we need to know about sources, what do we want in catalogues, what classes, structures, tables, links etc do we need.

#### 4. Survey Issues

What extra information do we need to understand science & statistics of catalogues, e.g. coverage maps, completeness maps,

#### 5. What observation issues will there be

specifically differences for different science goals

E.g. high – backgrounds, high dynamic ranges.

#### 6. User-friendliness

How much is this an issue?

#### 7. Plan and campaign on testing algorithms

#### 8. How to interact with ICC

#### 9. How to test?

#### 10. Pipe-line issues

#### 11. How to manage change (I'm not quite sure what this means [Seb](#))

#### 12. Specify a list of tools that will be needed to produce the proposed data products

#### 13. Assess limitations of available parameter space (instrument and observing mode parameters; known instrument noise characteristics) on achievable sensitivity to point source and extended emission

#### 14. Survey what's been done already for other facilities and what can be borrowed

#### 15. Establish a simulations programme (more ambitious and targeted than the deliberately limited programme devised for the ICC)

#### 16. Report to the SAG coordinators and receive guidance from them (should be on e-mail lists)

### Current Activities & Expertise

It would be worth noting what activities are currently being undertaken by members of this group or expertise that they have...

## Current members

- Seb Oliver (acting coordinator)
- Jason Glenn
- Glenn Laurent
- Pierre Chaniel
- Pasquale Panuzzo: expertises: pipeline development and HCSS development
- Bernhard Schulz
- Hervé Ausseil
- Annie Zavagno
- Mat Page
- Rupert Ward
- Nurur Rahman
- Nicola Schneider
- Alexander Menshchikov
- Dave Clements: SPIRE pipeline development coordinator
- Pierre Didelon : testing Sextractor and multiresolution on simulated images

## Some (self answered) questions by P. Panuzzo (22-Oct-2007)

1. Q: Is the goal of this team to produce a (point) source extraction code for both SPIRE and PACS data?

A: Well there could be two parts to that question (a) is the goal to produce code (b) code for both SPIRE and PACS. I'd say the simple answer to both is yes. However, the

goals go beyond producing code and into other issues, such a quality control [Seb](#)

2. Q: Who is developing the "basic" source extraction code For SPIRE? Which is the status of development for it? Which is the plan for it? Which algorithm are planned to be implemented?

A: As far I understand from ICC discussions, the SPIRE "basic" source extraction code will be developed by Huw Morris (RAL). This code will be the translation of [SussExtractor](#) code, which is developed by Richard Savage and Seb Oliver (see 2007 ApJ, 661, 1339) and written in IDL.

Rupert Ward (Sussex) has taken over from Richard Savage and is developing and testing SUSSExtractor algorithm(s) for ICC, he will be working with Huw Morris for implementation. [Seb](#)

In answer to the language question, yes it is currently in IDL but my understanding is that the plan is for it to be implemented ultimately in JAVA. I am currently doing some basic testing using V1.01 of the Spire Photometer Simulator. [Rupert](#)

3. Q: Should the code we are going to develop done in the HCSS framework?

A: My personal preference is "yes"...

I think this is a noble goal for an end-point, but certainly in the intermediate term we are likely to have to accept code writing in whatever

environment people are

happy with and what can be done efficiently. [Seb](#)

