

6 May 2011

Second Announcement
PAFs for SKA – a discussion workshop to focus PrepSKA CoDR PAF inputs

Venue: Brigham Young University
Provo, Utah

Wednesday 25 May – Friday 27 May 2011

Workshop program

SESSION 1 Wednesday 25 May; 0900 - 1230

PAFs and wide field science or alternatively *'what every engineer should know about my science'*

It is expected that the presentations in this session will focus on the following (rather than being overall SKA science talks per se);

1. Overview of the types of astronomy best done by PAFs (or only achievable with PAFs) – for SKA (arrays), for single dish (e.g. Arecibo, Parkes etc)
2. Detail presentation on key specifications and capabilities for this science project e.g.
what dynamic range,
would you trade number of dishes for X? for field of view? ... for what?
What about polarisation purity?
What drives these specifications?
How have they been derived?
How is the data processed and analysed – what are the key issues (bit sampling? Weighting schemes?)

09.30 – 10.00 Introduction; Science with PAFs - Lisa Harvey-Smith

10.00 – 10.30 Pulsars and time-domain science with PAFs - Joe Lazio

10.30 – 11.00 Morning Break

This next session is under development; focus being on identifying the **PAF (feed) optimisations – options & some lessons so far**

11.00 – 11.30 PAF optimisations (tentative title (Stuart Hay))

11.30 – 12.00 ASKAP PAF response analyses (Tony Willis)

12.00 - 12.30 Panel discussion; which direction should the SKA PAF optimisation be – what science work will guide this? How critical (or sensitive) is the cost budget? - Discussion "A"

12.30 – 14.00 Lunch

SESSION 2 Wednesday 25 May; 1400 - 1700

“PAF development updates”

Contributions from groups wishing to discuss latest PAF results;

- 14.00 – 14.30 APERTIF (Laurens Baker)
- 14.30 – 15.00 PAF developments at BYU/NRAO (Karl Warnick- tbc)
- 15.00 – 15.30 Afternoon Break
- 15.30 – 16.00 ASKAP PAF (Russell Gough)
- 16.00 – 16.30 FAN (Obs de Paris) (Cedric Dumez-Viou)
- 16.30 – 17.00 Arecibo (German Cortez/Don Campbell tbc)

- 17.00 End of day 1

SESSION 3 Thursday 26 May 0930 - 1700

PAFSKA CoDR preparation

- 09.00 – 09.30 WP2.2 CoDR; format and preparation (Neil Roddis)
- 09.00 – 09.30 Review existing PAF material (Carole Jackson)

- 10.00 – 10.30 PAF active antenna array concept (CSIRO: Stuart Hay)
- 10.30 – 11.00 Morning Break
- 11.00 – 11.30 PAF active antenna array concept (DRAO: Veidt, + ASTRON: tbc?)
- 11.30 – 12.30 Discussion – PAF design-for-manufacture; lessons from existing PAF R&D; next steps

- 12.30 – 13.30 Lunch

- 13.30 – 14.00 PAF receiver concept description 1- direct sampling (CSIRO; Russell Gough, Mark Bowen)
- 14.00 – 14.30 PAF receiver concept description 2- I/Q mixer (CSIRO; Russell Gough)
- 14.30 – 15.00 PAF receiver concept description 3 – direct optical high BW (DRAO: Bruce Veidt)
- 15.00 – 15.30 Discussion - receiver concepts, content, development of concept from here to July

- (Triquint presentation (1500-1530 – speaker tba)
- (U Manchester contributions?)

- 15.30 – 16.00 Afternoon Break

- 16.00 – 16.30 PAF beamformer design phase 1 (CSIRO: John Bunton)
- 16.30 – 17.00 PAF beamformer/correlator design (ASTRON; UNIBOARD (TBC))

- 17.00 – 17.30 Discussion “A”
- 17.30 End of day 2

Informal Workshop Dinner; Venue to be advised (own expense)

SESSION 3 continued

Friday 27 May ; 0930 – 1700

09.30 – 10.00 PAF M&C/imaging and computing loads (Tim Cornwell)
10.00 – 10.30 Round table discussion – PAF data loads; SKA 1 and SKA 2; are PAFs good value per pixel? Return to discussion “A”

10.30 – 11.00 Morning Break

11.00 – 12.30 Review of CoDR PAF materials (roundtable)

12.30 – 13.30 Lunch

13.30 – 14.30 Discussion/presentation of ancillary CoDR documentation wrt PAF inputs;

- Risk register and mitigation strategies (ASTRON draft)
- Strategy and plans for the next phase (PEP review)
- Logistic planning
- Identification of software and related software documentation
- Technology roadmap

14.30 – 15.00 Roundtable: discussion; concept description development – timeline, inputs etc.

15.00 – 15.30 Afternoon Break

15.30 – 17.00 Continue discussion or break into small groups

17.00 Workshop end

Registrations and proposals for contributions please to Dr Carole Jackson, CSIRO Astronomy and Space Science; carole.jackson@csiro.au

There is no charge for this workshop; morning and afternoon breaks will be provided (but not lunches or dinners). A ‘workshop dinner’ will be arranged and details are to follow.

Please note that BYU is planning to organize a broader, more extensive phased array research and technology meeting later in 2011 or early 2012. The workshop announced above is focussing on the PAF inputs to PrepSKA WP2.2 and does not intend to replace the technology meeting in any way.