

# Introduction to KSP Discussions

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# Overview

- Recent and forthcoming changes to UK SKA representatives
- UK Key Science Project ambitions and interests
- UK Funding Priorities Strategy Document

# UK SKA Representatives

A number of changes are happening in UK SKA representatives:

- Paul Alexander recently stood down as UK's Science Director on SKA Board; replaced by (current UKSKASC chair) Philip Best
- John Womersley also stood down as UK's Voting Director on SKA Board; replaced by Adam Baker (from BEIS)
- Matthew Johnson (STFC's UK Programme Manager for SKA) left STFC; replaced by Justin O'Byrne
- Current UK SKA Science Committee term of office comes to an end on 31/12/16: some rolling-over of membership

# New UK SKA Science Committee

From 1/1/17, the UKSKASC will be:

- Chair: **Jonathan Pritchard** (Imperial)
- Deputy-chair: **Anna Scaife** (Manchester)
- Members:

David Bacon (Portsmouth)	Mark Birkinshaw (Bristol)
David Britton (Glasgow)	Judith Croston (Southampton)
Steve Eales (Cardiff)	Stewart Eyres (UC Lanc)
Rob Fender (Oxford)	Steven Longmore (LJMU)
Stephen Serjeant (OU)	Catherine Walsh (Leeds)
- Ex-officio:

Philip Best (UK Science Director on SKA Board; Edinburgh)
Rosie Bolton (SDP consortium; Cambridge)

# UK Ambitions for KSPs

Key Science Projects are anticipated to account for 50-70% of SKA-1 time for the first few years of operation

The UK is buying in to SKA1 at the 15-20% level, and so strong UK-led scientific return on the KSPs is essential

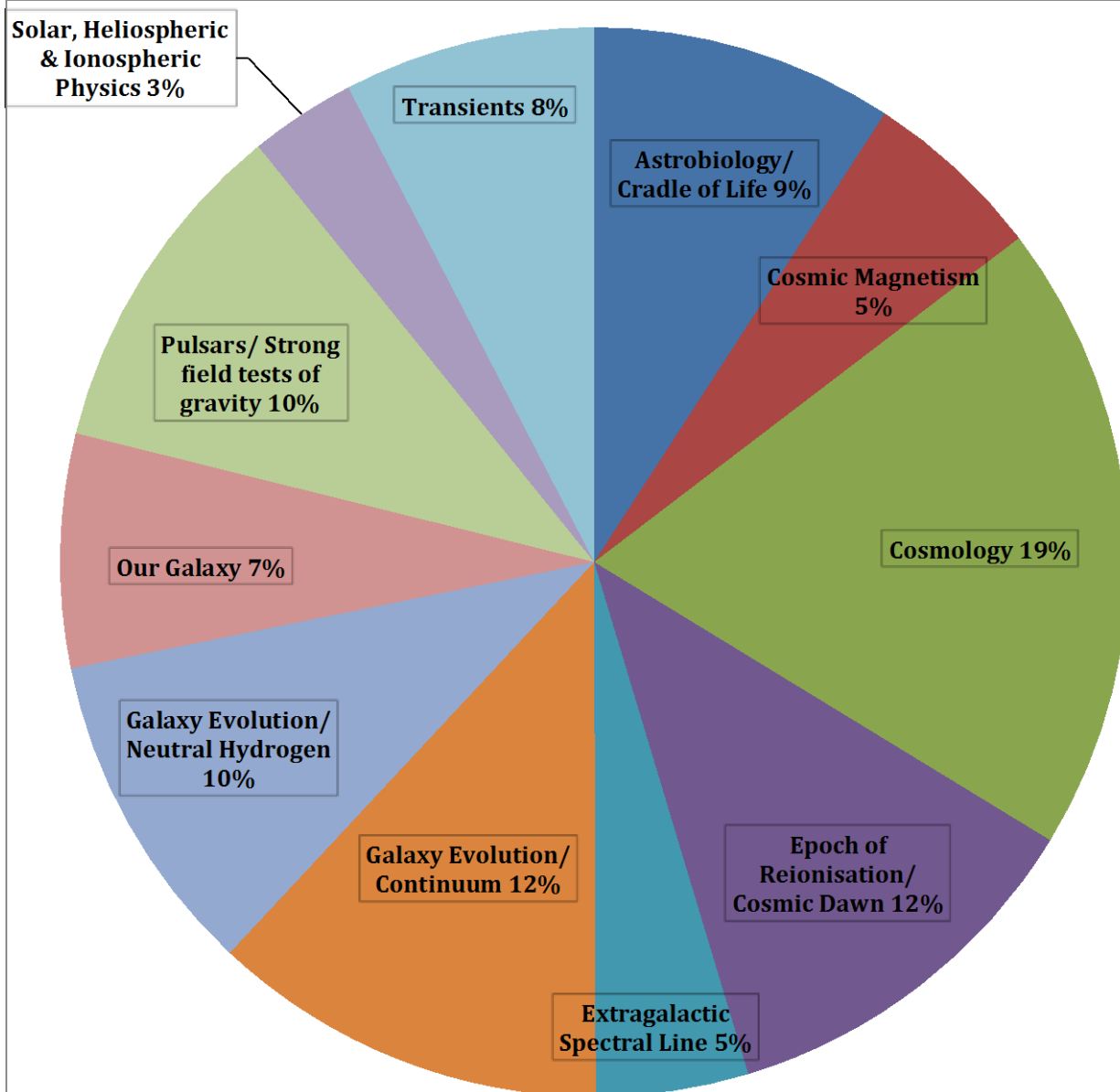
Current Science Working Groups are (in theory) not proto-KSPs

- but most existing KSP-preparation discussions are taking place within the SWGs

UK SKA SC recently surveyed all University departments for SKA ambitions, and have compared this against current SKA activity

- are there areas where major expansion of effort is anticipated?
- are there areas that we need to focus on developing?

# Anticipated spread of UK SKA effort in 2021



After responses from all but 2 institutes, UK SKA effort in 2021 predicted to be:

- just over 55 FTE
- (increased by ~13 FTE from current 'broadly SKA-related' effort)
- split across more than 30 research institutes.

Science Working Group Area	Expected 2021 SKA effort
Cradle of Life	9%
Cosmic Magnetism	5%
Cosmology	19%
Epoch of Reionisation	12%
Ex-gal Spectral line	5%
Gal Evol: continuum	12%
Galaxy Evol: HI	10%
Our Galaxy	7%
Pulsars	10%
Solar	3%
Transients	8%

<b>Science Working Group Area</b>	<b>Expected 2021 SKA effort</b>	<b>Distribution of current UK SWG members</b>	<b>Distrib. of UK science book authors</b>
Cradle of Life	9%	5%	14%
Cosmic Magnetism	5%	2%	9%
Cosmology	19%	21%	20%
Epoch of Reionisation	12%	9%	8%
Ex-gal Spectral line	5%	7%	-
Gal Evol: continuum	12%	11%	18%
Galaxy Evol: HI	10%	3%	0%
Our Galaxy	7%	8%	-
Pulsars	10%	9%	8%
Solar	3%	18%	-
Transients	8%	9%	6%



<b>Science Working Group Area</b>	<b>Expected 2021 SKA effort</b>	<b>Distribution of current UK SWG members</b>	<b>Distrib. of UK science book authors</b>	<b>Current % of SWG from UK</b>	<b>% science book authors from UK</b>
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Cosmic Magnetism	5%	2%	9%	5%	9%
Cosmology	19%	21%	20%	25%	35%
Epoch of Reionisation	12%	9%	8%	14%	19%
Ex-gal Spectral line	5%	7%	-	21%	-
Gal Evol: continuum	12%	11%	18%	14%	22%
Galaxy Evol: HI	10%	3%	0%	5%	0%
Our Galaxy	7%	8%	-	15%	-
Pulsars	10%	9%	8%	14%	16%
Solar	3%	18%	-	26%	-
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# UK Funding for SKA KSP development

SKA will deliver “science-ready” data through SDP, but there will remain considerable work to be done to deliver that science

- Development of Regional Data Centres
- Pipelines and algorithms for post-processing of data
- Complementary / synergistic datasets
- Simulations and theoretical interpretation

Work on these aspects will need to start early (already)

- UK leadership of this preparatory work is essential to translate into UK leadership of KSP areas

Funding mechanism?

- Harder to attract funding when science pay-off still years away...

# UK Funding for SKA KSP development

Possible approaches considered by UKSKASC & others

- then discussed with Colin Vincent at STFC

A dedicated funding stream for SKA is not a viable option

- Science Board would need to approve this and are unlikely to do so given existing investment levels in SKA
- How would requests be tensioned against e.g. Astronomy Grants Panel (AGP) proposals?
- Why SKA – similar dedicated funding lines for all other facilities?

Instead, funding will need to come through AGP

- but AGP would benefit from guidance of UK priorities, and how the jigsaw fits together

# UK Funding Strategy Document

Plan is to put together a 'UK SKA KSP preparation and funding priorities' strategy document

- Would go to Science Board for approval of priorities
- Would then be advisory to AGP
  - allows proposers to justifiably claim they are on UK roadmap
  - helps AGP to better understand UK priorities, how it fits together, and what will come in over a 3-year cycle
  - AGP will still rank primarily on presented case, using this guidance

Document should:

- Present UK priorities, realistic UK aims, strategy to achieve this
- Clearly lay out existing funding and required future funding
  - and especially additional ways in which this will be sourced
- Be realistic: we need to have ruthless internal assessment / cull
- Ideally, be ready in time for August 2017 AGP meeting.

# Discussion Time

Plan for this afternoon is to set the ball rolling on this:

- Discuss priorities within each KSP area
- Bring these back together for plenary discussion
- Agree process for taking this forward & developing document
  - New UKSKASC committee should take the lead on this, but wider community involvement is essential