# Astronomy Supercomputer Time Allocation Committee Application Form **For time on facilities in Q3 – Q4 2017**

Please send your completed application to: **ahassan@swin.edu.au** by **5pm (AEST) Tuesday 1st June 2017.**

## Section A – Administrative Summary

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| **Project Title:** |  |

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| **Type of Project**  **(Compute or Data):** |  |
| **Project Code**  (If the continuation of a previous project)**:** |  |
| **Lead Chief Investigator Surname**  (may be a PhD student)**:** |  |
| **If Lead CI is a PhD student, name of PhD supervisor:** |  |

### Proposal Summary

Please summarize aims, significance and expected outcomes of the project (**about 300 words max.**). Also include a summary of the computational resources required and highlights of the computational approach. If this project is a follow-up or continuation of previously allocated time, please indicate this and summarize the distinct contribution of the currently requested time.

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## Section B - Details of Researchers

### Lead Chief Investigator

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| **Name:** |  |
| **Email Address:** |  |
| **University or Institution:** |  |
| **Faculty or Division:** |  |
| **Position Held:** |  |
| **Office Phone:** |  |
| **Mobile Phone:** |  |

### Other Researchers

Please note, if the Lead CI is a PhD student, their thesis supervisor must be listed as a CI below.

\* Select “CI” for other Chief Investigators, and “Researcher” for students, research assistants, research associates and other staff etc.

### Researcher 1

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| --- | --- |
| **Name:** |  |
| **Researcher Role\*:** |  |
| **Email Address:** |  |
| **University or Institution:** |  |
| **Faculty or Division:** |  |
| **Position Held:** |  |
| **Office Phone:** |  |
| **Mobile Phone:** |  |

### Researcher 2

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| --- | --- |
| **Name:** |  |
| **Researcher Role\*:** |  |
| **Email Address:** |  |
| **University or Institution:** |  |
| **Faculty or Division:** |  |
| **Position Held:** |  |
| **Office Phone:** |  |
| **Mobile Phone:** |  |

### Researcher 3

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| --- | --- |
| **Name:** |  |
| **Researcher Role\*:** |  |
| **Email Address:** |  |
| **University or Institution:** |  |
| **Faculty or Division:** |  |
| **Position Held:** |  |
| **Office Phone:** |  |
| **Mobile Phone:** |  |

### Researcher 4

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| --- | --- |
| **Name:** |  |
| **Researcher Role\*:** |  |
| **Email Address:** |  |
| **University or Institution:** |  |
| **Faculty or Division:** |  |
| **Position Held:** |  |
| **Office Phone:** |  |
| **Mobile Phone:** |  |

### Researcher 5

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| --- | --- |
| **Name:** |  |
| **Researcher Role\*:** |  |
| **Email Address:** |  |
| **University or Institution:** |  |
| **Faculty or Division:** |  |
| **Position Held:** |  |
| **Office Phone:** |  |
| **Mobile Phone:** |  |

**Add further researchers as required by copying the tables above.**

### Anticipated Percentage Usages per Organisation

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| **Organisation:** | **Percentage** |
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### ANZSRC Research Classifications

**ANZSRC Fields of Research (FOR) codes**

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| **FOR code** | **Percentage** | **Description** |
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### Research Track Record of each Chief Investigator

Please complete the following two pages for each Chief Investigator (copy the relevant tables as required.)

* Please **provide the refereed publications lists relevant to the research area of this project for the past 5 complete years**.
* Publications are to be classified under headings of Book, Book Chapters, Refereed Journal Articles and Refereed Conference Publications. **Please include details of author, journal, volume and page number and year for each publication**.
* Enter any Awards, Honours and Prizes.
* Please add an empty line between each publication

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| **CI Name:** |  |

**Publications, Awards, Honours and Prizes:**(You may alternatively attach a CV to this application containing your publication list.)

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| **Link to ADS/ Google Scholar Publications List:** |  |

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| Career H-index: |  |
| Number of citations over your full career: |  |
| H-index relevant to the papers published in the past 5 complete years: |  |
| Number of citations relevant to papers published in the past 5 complete years: |  |
| Method used to extract the citations data quoted above - e.g. Web of knowledge, Google Scholar, Scopus: |  |
| The percentage of time available to you in your professional work for research averaged over the past 5 years: |  |
| Any career interruptions you may have had, and any other relevant factors that may have affected your research productivity: |  |

In **approximately half of one A4 page**, please provide the following

1. An outline of your most significant research contributions during your career,
2. Your impact on the research field over the past 10 years, and
3. A brief statement of your computational expertise and experience.

Research Contributions and Experience

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## Section C – Research Proposal

### Significance, Impact and Innovation of the Research

In **approximately one A4 page** describe the research to be supported providing sufficient background for the aims of the project to be clear. This section should emphasize the significance, impact and innovation of the research. If this project is a follow-up or continuation of previously allocated time, please indicate this and describe how the new allocation will allow you to make a distinct contribution.

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## Section D - Resource Requirements and Justification of Needs

### Resource Requests

**Service Units**  
Compute time allocations are made in Service Units (SU), which reflect both the time used and the priority at which it is used. For normal use, one SU corresponds to one hour of elapsed time on one processor core of the system. Allocations are split into (up to) four quarterly sub-allocations. Allocations unused at the end of a quarter are lost, though consideration will be given to carrying unused allocations forward and adjusting quarterly allocations in some circumstances.  
**Data Storage**  
Data quantities are to be specified as the total archive data storage required in each of the quarters. For example if a total of 10 GB of data is to be stored in the first of the 3 month periods and then effectively no files stored or removed, enter 10 in each of the fields.   
**Minimum Feasible\*\***  
Indicate the minimum allocations below which the project would not be feasible on the requested resource (**show the total for over all the quarters - enter an integer value only**)

### Resources at NCI National Facility

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| Resource | Q3 - 2017 | Q4- 2017 | Minimum feasible\*\* |
| **NCI NF Fujitsu Primergy (SU)** |  |  |  |
| **NCI NF Data Storage (GB)** |  |  |  |

### Resources at Swinburne

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| Resource | Q3 - 2017 | Q4- 2017 | Minimum feasible\*\* |
| **swinSTAR CPU facility at Swinburne** (SU) |  |  |  |
| **swinSTAR Data Storage (GB)** |  |  |  |
| **gSTAR GPU facility at Swinburne** (SU) |  |  |  |
| **gSTAR Data Storage (GB)** |  |  |  |

*6 SU = 1 GPU hour on gSTAR GPU facility at Swinburne if using GPUs*

### Resources at Pawsey ATHENA

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| Resource | Q3 - 2017 | Q4- 2017 | Minimum feasible\*\* |
| **Pawsey ATHENA (SU)** |  |  |  |
| **Data Storage (GB)** |  |  |  |

### Justify your Requests

**Justify the CPU/GPU hours requested**  
Explain your needs from a technical viewpoint, and in the context of the research objectives:

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**Justify the total amount of Data Storage requested**Explain your needs from a technical viewpoint, and in the context of the research objectives:

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**Indicate why access to the systems for which you have applied is critical to your work.**Characterise this in terms of a need for any of the following: distributed computation, large memory, large disk, specific software, specific datasets or any other requirement (to be specified).

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**Describe the algorithms used, and the types of calculations involved.**If you primarily use package software, note that here.

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**Describe the nature of your jobs - Distributed vs Single CPU vs GPU***Please answer the questions where appropriate for your project*  
Does your project involve truly distributed computation which needs both multiple nodes and the fast interconnect of the machine? If so, please provide:

* A table of walltime vs the number of processors used for a typical problem as evidence that the problem scales efficiently with processor number, up to the number intended to be used.
* Details of the extent of data transfer between nodes in the form of number of MPI calls/sec and Mbytes/sec transferred.

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Does your project require the running of a large number of single processor jobs (or parallel jobs which could alternatively be run as an ensemble of single processor jobs)? *Please note that for ease of system management and optimum throughput, ensemble jobs are better to be run as a number of single processor jobs.*

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Is your project targeted at any specialised hardware, e.g. the high-density GPU nodes on gSTAR?   
Please specify any details of your GPU and CPU requirements, such as the number of GPUs and CPU-cores per job.

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**Special Software Requirements**Name any third-party software not currently available on the facility that is essential to the project.

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**Other Special Requirements**These may include extraordinary disk requirements for running jobs, need for high priority etc. Note that substantial usage at high priority without explanation may result in an adjustment to unused and future allocations.

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If you require any additional assistance that would help achieve better performance on the systems please provide details here. Also enter any aspects of the system configuration or management that is adversely affecting your work.

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## Section E - Progress Report for an application following on a previous application

### Progress Report

If this proposal is a continuation of a project previously awarded time, please provide a Progress Report on the work completed to date (max. about ¾ page). Include any publications, preprints, or works in progress resulting from the previous allocation. Also describe any delays or setbacks that may have hindered progress on the previous allocation.

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