ESO studentship

Two years below the Southern Cross

Lucie Jílková

Leiden Observatory

April 16, 2014, Prague

7 years in Chile: The Accomplishments and Goals of Czech Astronomers at ESO

ESO Studentship Programme

who?	for students enrolled in a Ph.D. programme
what?	PhD project started and supervised at the home university while co-supervised by ESO staff astronomer
where?	in Garching or Santiago
how long?	from one to two years

studentships.eso.org

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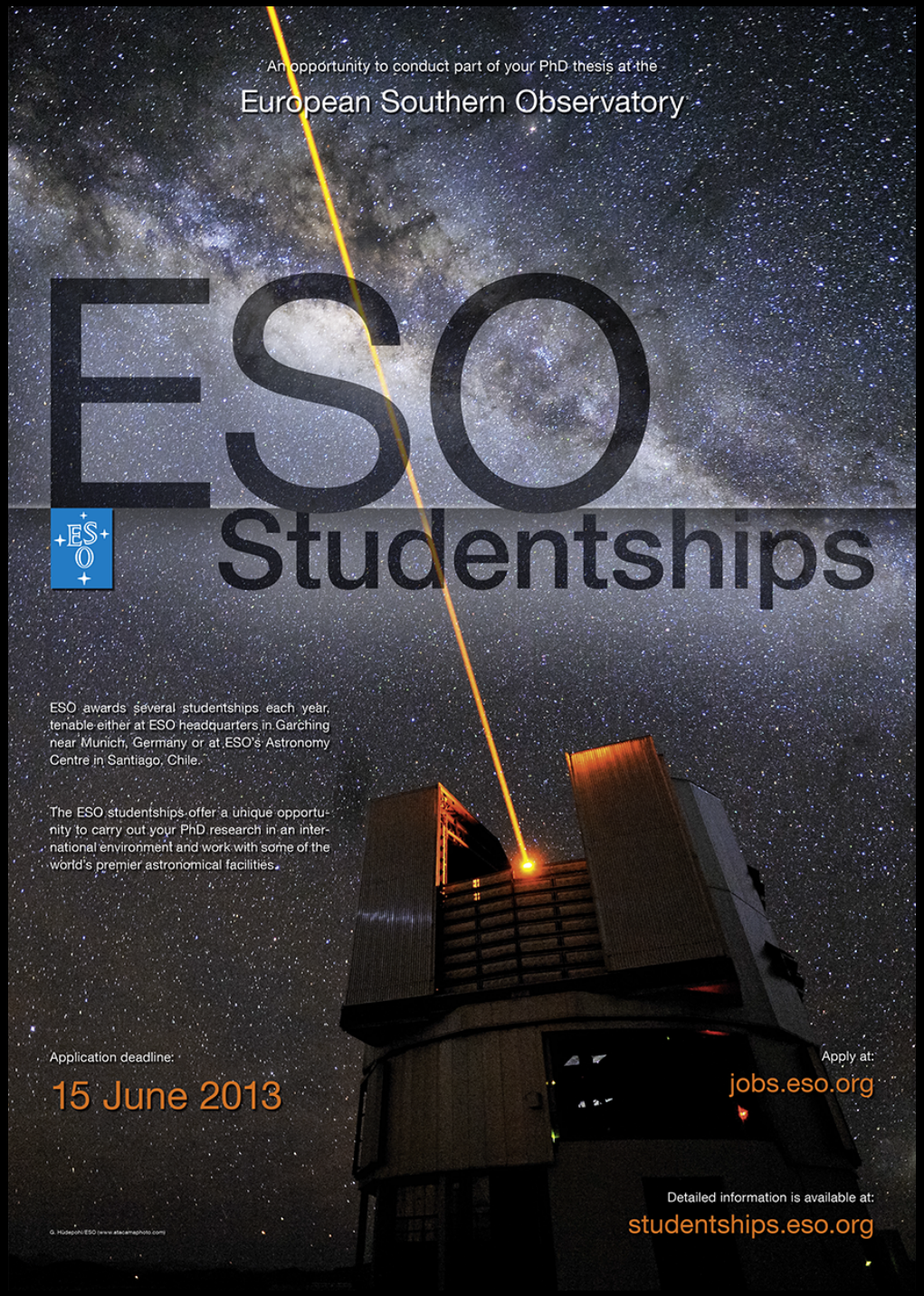
☛ studentships.eso.org ☚


An opportunity to conduct part of your PhD thesis at the
European Southern Observatory
ESO
Studentships
ESO awards several studentships each year, tenable either at ESO headquarters in Garching near Munich, Germany or at ESO's Astronomy Centre in Santiago, Chile.
The ESO studentships offer a unique opportunity to carry out your PhD research in an international environment and work with some of the world's premier astronomical facilities.
Application deadline:
15 June 2013
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jobs.eso.org
Detailed information is available at:
studentships.eso.org
G. Hüdepohl/ESO (www.atacamaphoto.com)

personal view

Sept 2008	PhD at DTPA, FSc, Masaryk University, Brno supervisor: Filip Hroch topic: *extragalactic and general*
Sept 2008 – Nov 2009	collaboration with Bruno Jungwiert and his working group at Astronomical Institute ASCR topic: shell galaxies
Dec 2009 – Nov 2011	ESO studentship in Santiago supervisor: Giovanni Carraro topic: Orbits of Open Clusters
Dec 2011 – Jun 2013	DTPA, FSc, Masaryk University, Brno PhD finished
Oct 2013 – now	postdoc at Leiden Observatory, Leiden University with Simon Portegies Zwart, Computational Astrophysics working group

more objective view

questionnaire about the ESO studentship experience

- ? current status
- ? location of the studentship
- ? motivation
- ? benefits of the studentship
- ? supervisor availability
- ? . . .

more objective view

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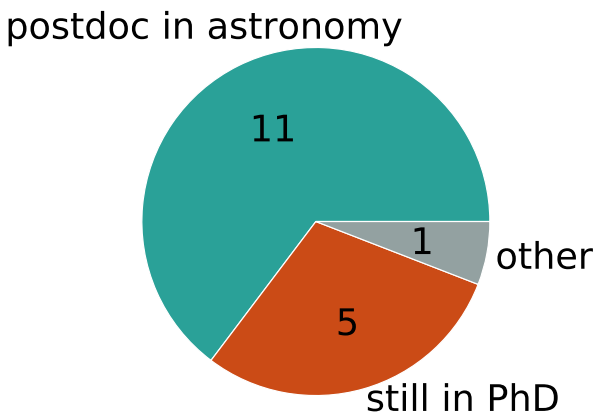
statistic from 17 former ESO Santiago students

with current status



coming from

Belgium, 6×Chile, Czech Republic, 2×France, 4×Germany, Mexico, Portugal, South Korea

practical information

application CV, proposed PhD project, two letters of reference, several documents from the home university

15 June

terms of services studentship, health insurance, annual leave, family allowances, travel expenses, relocation, . . .

- great overall support from the Human Resources department

PhD projects

currently offered 6 in Santiago
40 in Garching

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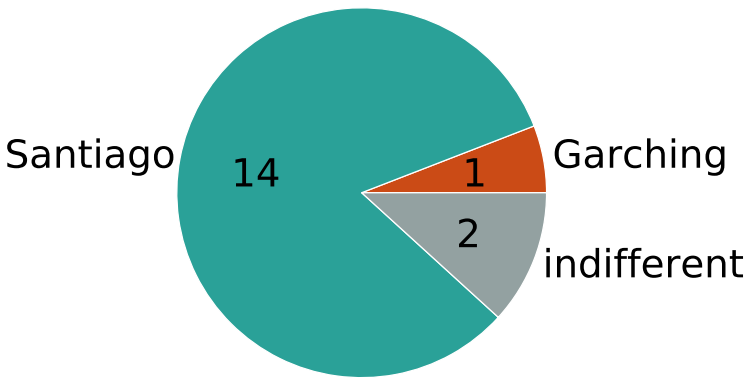
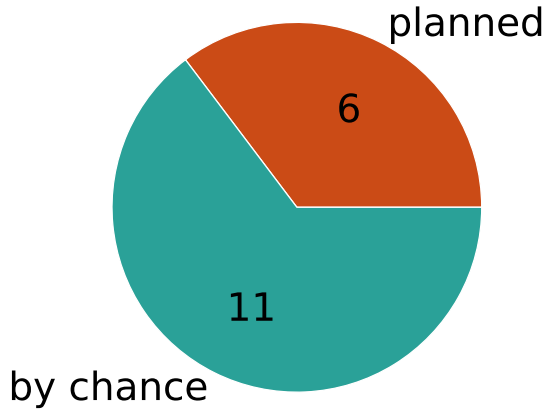
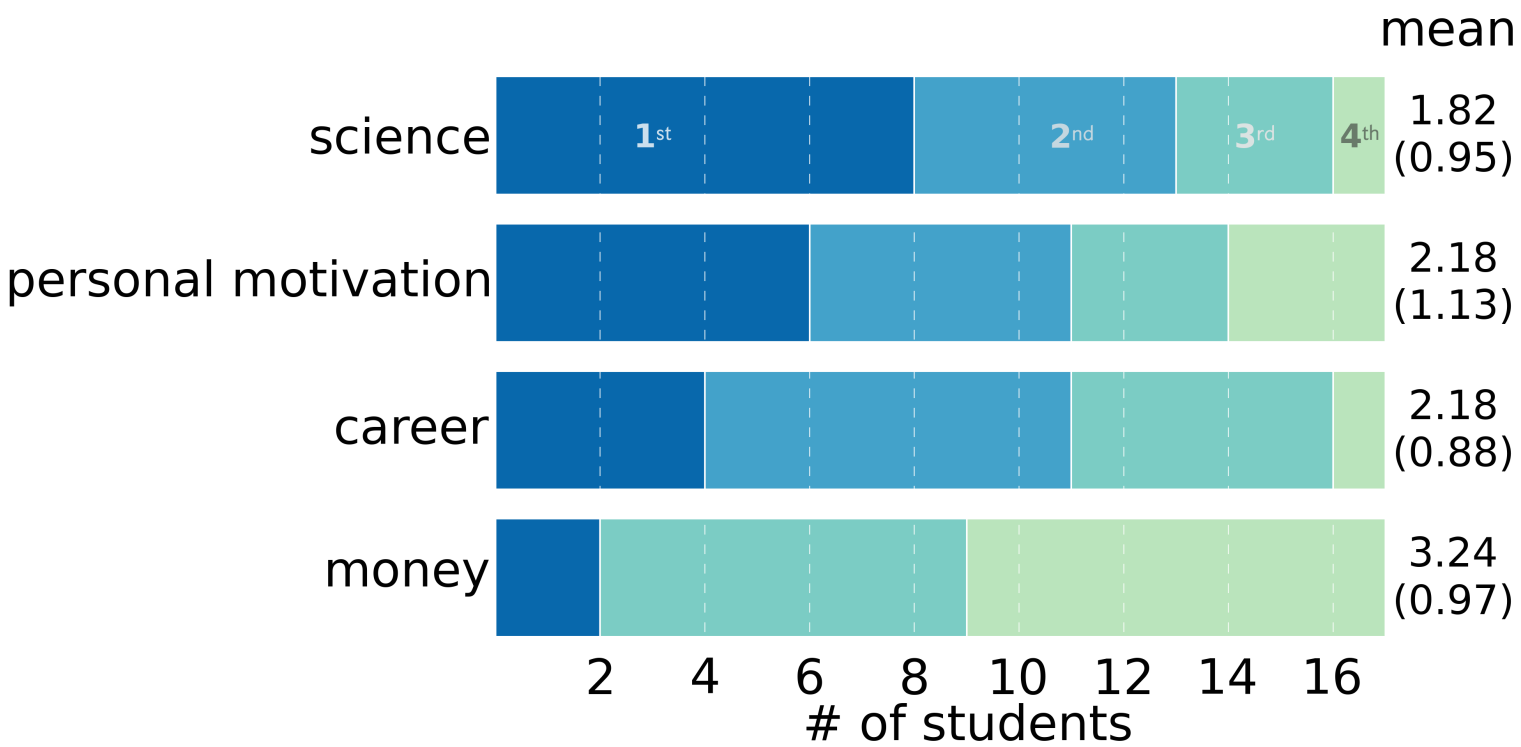
preferred location



studentship planning



I did it for . . .


mean
science
1st
2nd
3rd
4th
1.82
(0.95)
personal motivation
2.18
(1.13)
career
2.18
(0.88)
money
3.24
(0.97)
2
4
6
8
10
12
14
16
# of students

what makes the ESO Studentship unique?

as presented at `studentships.eso.org`

- truly inter-national, -cultural, -disciplinary environment
  - almost 100 astronomers at ESO in Santiago
  - several astronomical departments at Santiago universities
- direct contact with ESO observatories and their staff
  - observatory projects
  - insight into the life of observatory
  - instrumentation and observational techniques
- lively scientific environment
  - wide offer of talks
- support of ESO staff astronomer (co-supervisor) and Fellow mentor

environment and collaboration

- truly inter-national, -cultural, -disciplinary environment
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- stimulating atmosphere at the ESO Santiago offices
- every day science coffees, weekly–monthly students meetings, group meetings
- many visitors
- I was involved in several projects, some still ongoing
  - lead by ESO scientist but also by researchers outside ESO
  - not much active collaboration with other Chilean institutes

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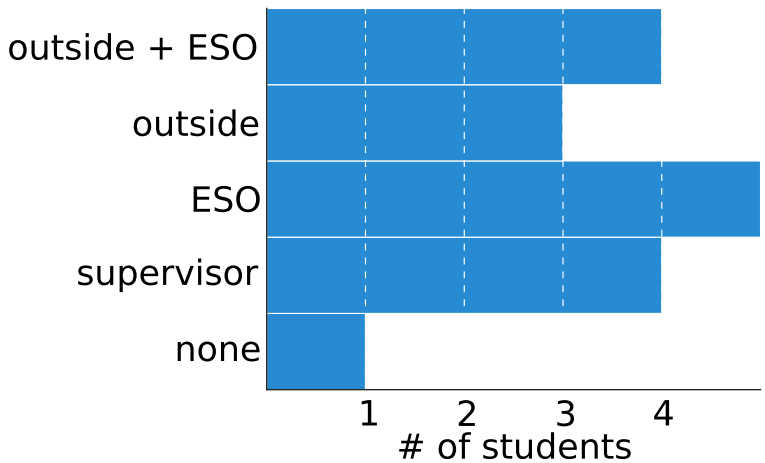
established collaboration



"It is a pity there is a lack of collaboration between ESO and Chilean universities. More interaction like teaching would have been very interesting in this PhD."

observational skills

- direct contact with the ESO observatories and their staff
  - observatory projects
  - insight into the life of the observatory
  - instrumentation and observational techniques

- observatory project at Paranal (calibration of HAWK-I)
- hands-on experience with smaller telescopes
  - Cerro Tololo Inter-American Observatory (7 nights, 1 m)
  - Las Campanas Observatory (2×7 nights, 1 m)
- everyday contact with the observatory
- \+ [ALMA trip (Nov 2011)]
- writing of proposals

observational skills

- direct contact with the ESO observatories and their staff
  - observatory projects
  - insight into the life of the observatory
  - instrumentation and observational techniques

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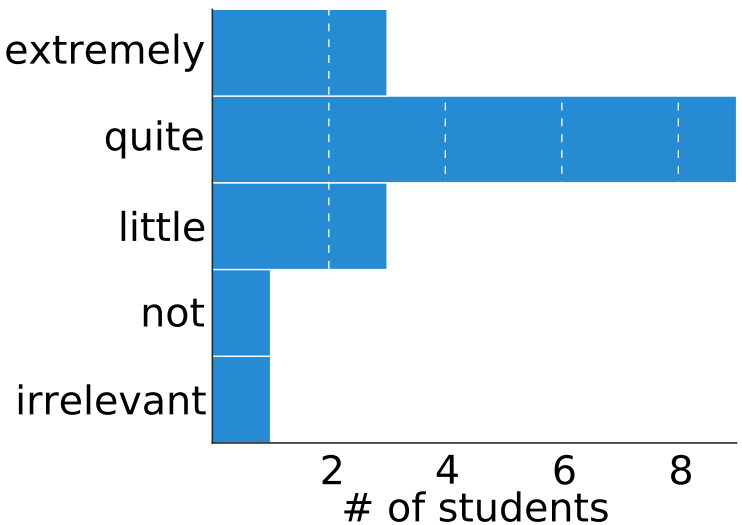
beneficial for observational skills



"If you are willing to, you can gain lots of observational experience . . . "

supervision

- support of ESO staff astronomer and Fellow mentor

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staff astronomer	co-supervisor of the thesis / Giovanni Carraro /
	is generally a very busy person
fellow mentor	adviser and guidance in the non-scientific aspects of science / Magaretha Pretorius (now Marie Curie fellow at Oxford) /
	"Fellows were a very important support!"

supervision

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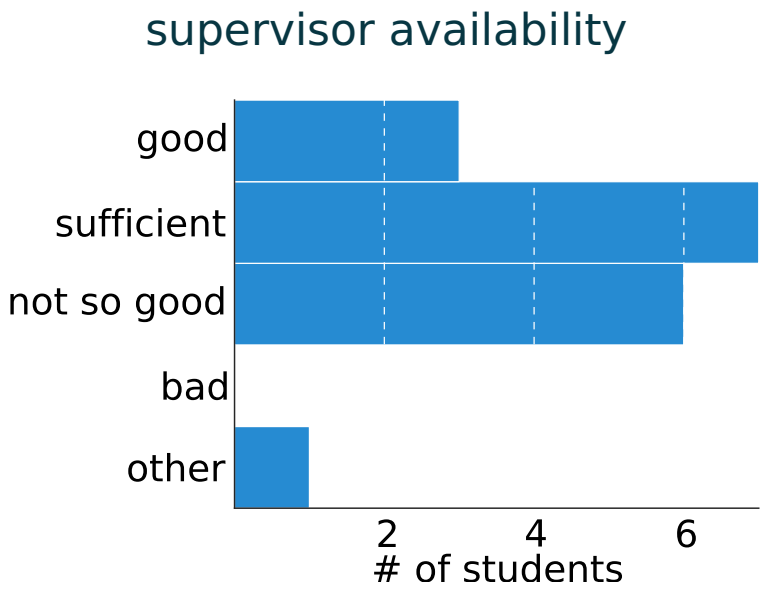
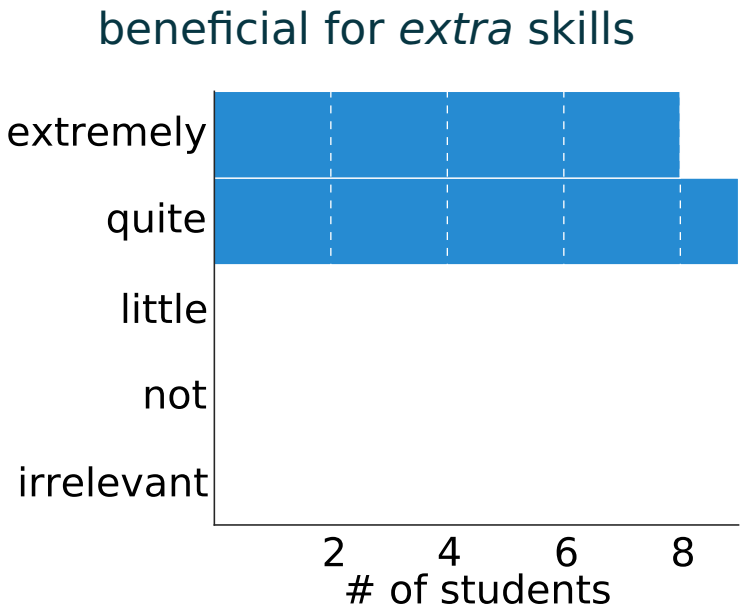


added value

- lectures on presentation skills and communication in science, writing job applications, outreach, . . .
- ESO workshops – participation and organization
- Spanish – ESO covers 40 hours of individual lessons

added value



"You should include a question about the level of Spanish:

a) Spawhat???

b) Mi no habla español.

c) Que m****a de pregunta es esta?"

theoretical skills

- most of the scientist at ESO Santiago are observationally oriented

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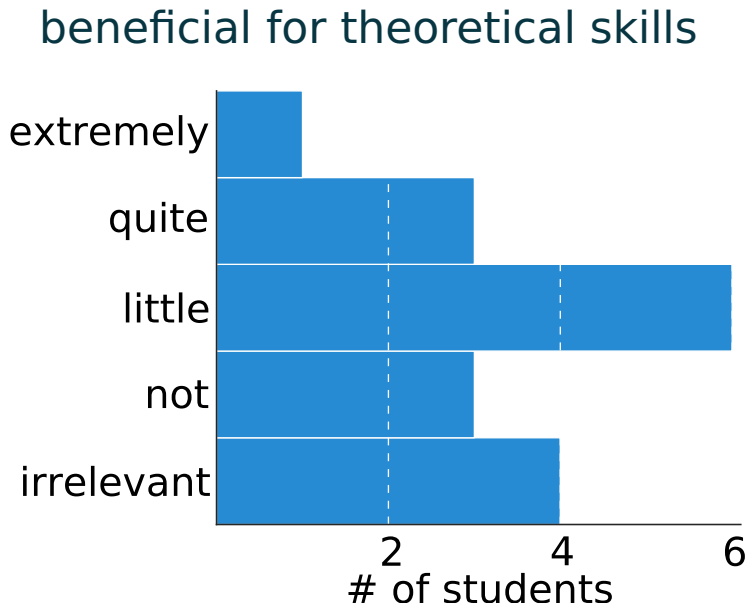


personal experience

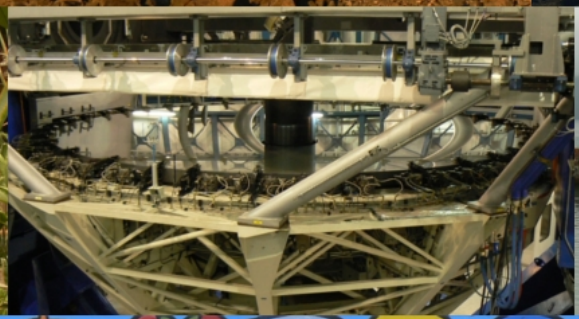
"Apart from the work-related aspects, the ESO studentship in Chile was also an amazing and fundamental personal experience."


¡Arriba Chile!







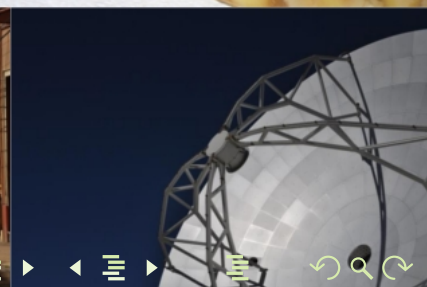













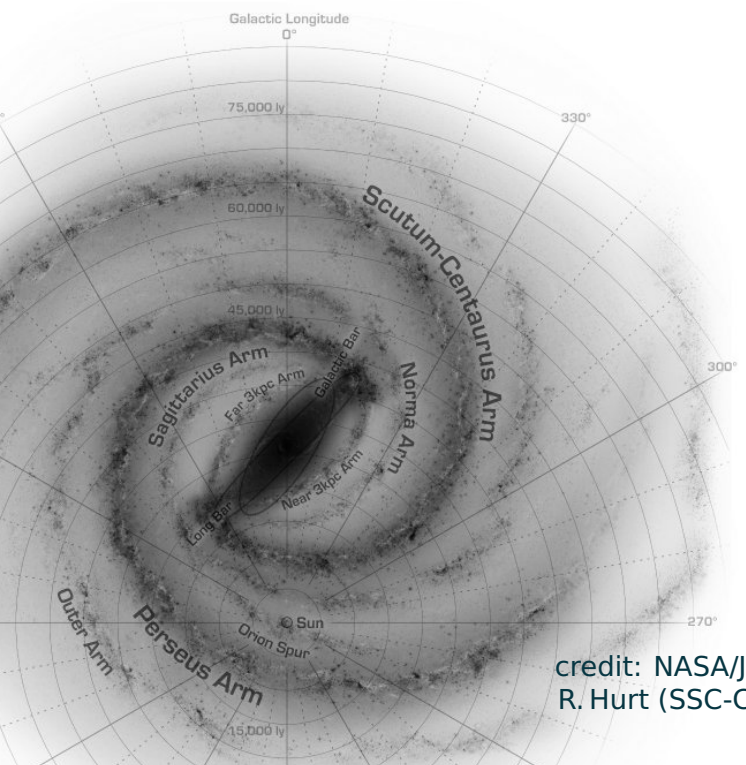
orbits of open clusters

motivation how are the orbits of open clusters influenced by the non-axisymmetrical components of the Milky Way?

aim investigate orbits of open clusters in a *realistic* model of the Milky Way gravitational potential

cases

1. orbit and origin of the unique open cluster NGC 6791
2. orbits of a sample of open clusters and their connection with clusters metallicity and age



credit: NASA/JPL-Caltech
R. Hurt (SSC-Caltech)

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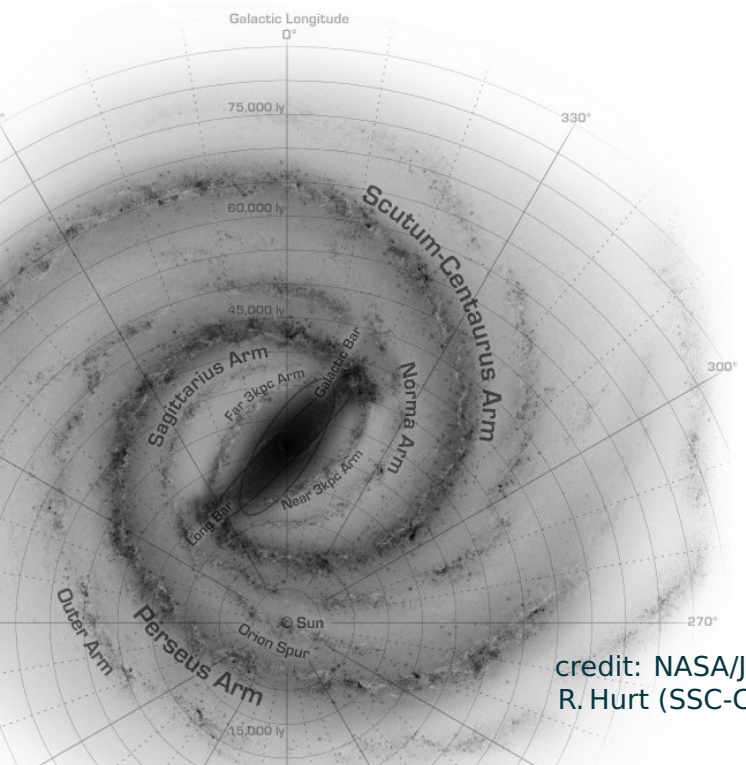

credit: NASA/JPL-Caltech
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- the Milky Way model including the bar and spiral arms – radial migration due to the resonance overlap
- initial conditions (study of proper motions), orbital parameters, context with other characteristics of the clusters

orbits of open clusters

summary and results

1. orbit and origin of unique open cluster NGC 6791
   - scenario of the inner disk origin and later migration due to the resonance overlap tested – possible but with a very low probability

   / Jílková, Carraro, Jungwiert, & Minchev (2012) /

2. orbits of sample of 34 open clusters and their connection with clusters metallicity and age
   - new proper motions derived using the UCAC4 catalog
   - orbits are close-to-circular, similar in the axisymmetric and non-axisymmetric models

   / PhD thesis (2013) /

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\+ inner disk open clusters / Magrini et al. (2009) /

\+ globular clusters / Ortolani et al. (2011), Casetti-Dinescu et al. (2013) /

\+ lithium-rich giants in the Galactic thick disk / Monaco et al. (2011) /

ESO studentship

in Santiago

- great opportunity to enhance *your* PhD studies
- perfectly suited for observationally oriented topics
- very enriching for theoretically oriented students wanting to learn about observations, with certain level of independence and support for the theoretical part