

ACS Community Branch

Who we are, and what can YOU do

Arturo Hoffstadt Urrutia

[<ahoffsta@alma.cl>](mailto:<ahoffsta@alma.cl)

ALMA Observatory



What is ALMA Common Software (ACS)

Control and monitoring software framework developed by ALMA for its own communications. It's consists in a bundle of already available software (such as CORBA ORBs, ACE, java libraries) newly provided solutions (nc, monitoring, cdb) and tools that allows us to develop solutions based in the component/container architecture.



What is ACS Community Branch (ACB)

A completely open source control and monitoring framework, useful not only for ALMA, but for the entire astronomy and control community.

Maintained and extended by its own users and enthusiasts.





A completely open source ...



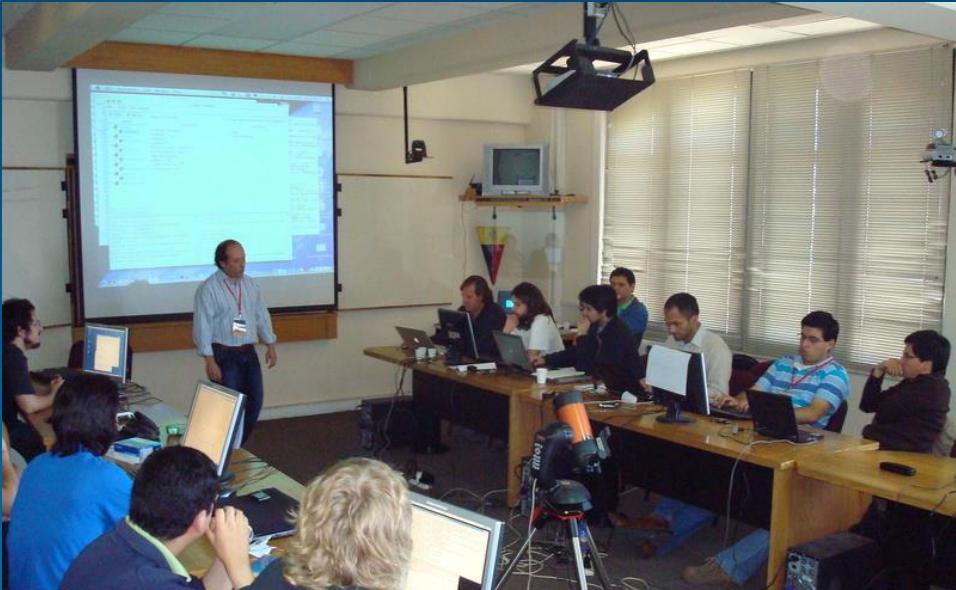
2006, Germany



... control and monitoring framework, ...



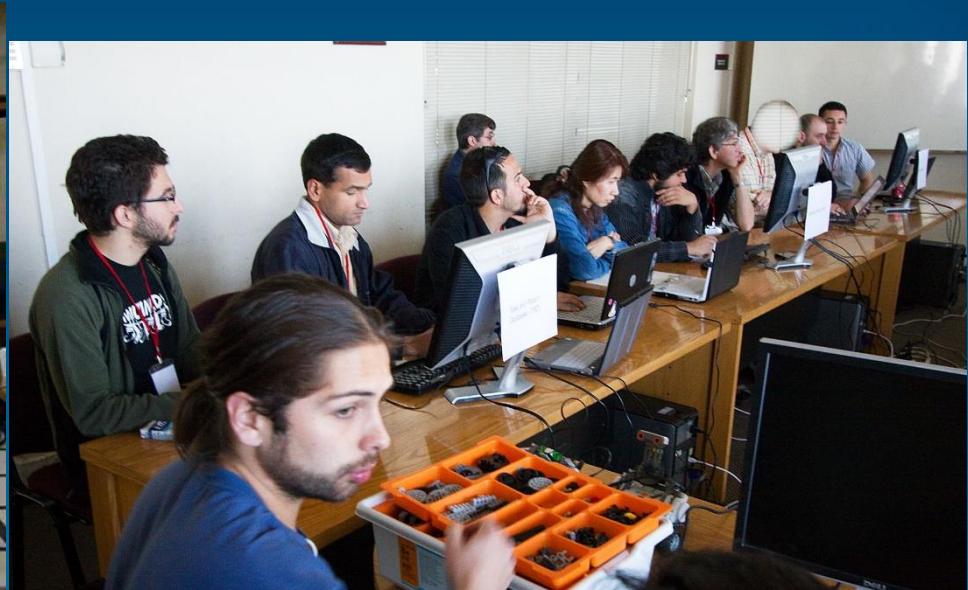
2007, Chile



... useful not only for ALMA ...



2008, Chile



... but for the entire astronomy and control community.



2009, Chile



Maintained and extended by its own users and enthusiasts.



2014, Brazil



... we hope you! :D



2014, Germany

ACS Community

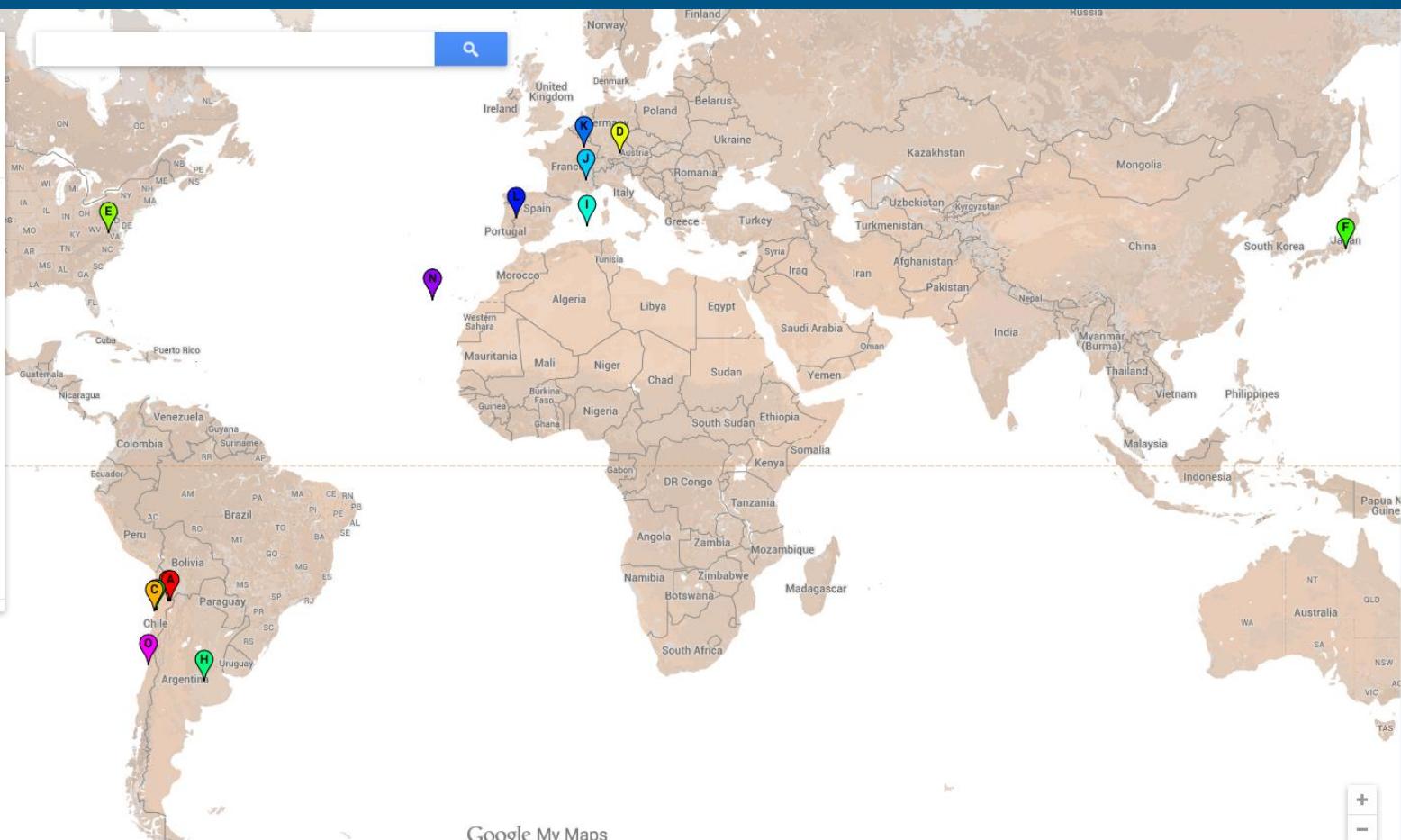
Map of ACS Community locations. Learn more about the ACS Community at



Made with Google My Maps

 Places

-  APEX (MPIfR/ESO)
-  ALMA (NRAO/ESO/NAOJ)
-  SPARTA (ESO)
-  ESO
-  NRAO
-  NAOJ
-  Observatorio Cerro Armazones (RU...)
-  LLAMA
-  Sardinia Radio Telescope
-  ASTRI (INAF)
-  Cherenkov Telescope Array
-  ARIES XXI (OAN)
-  BATMAN (INAF)
-  Gran Telescopio de Canarias
-  UTFSM



Google My Maps

1,000 km  Map data ©2015 Google, INEGI [Terms](#)





ALMA Observatory

APEX



NINS





ALMA Observatory

ALMA



NINS
NSF



Credit: Christoph Malin, an ESO Photo Ambassador

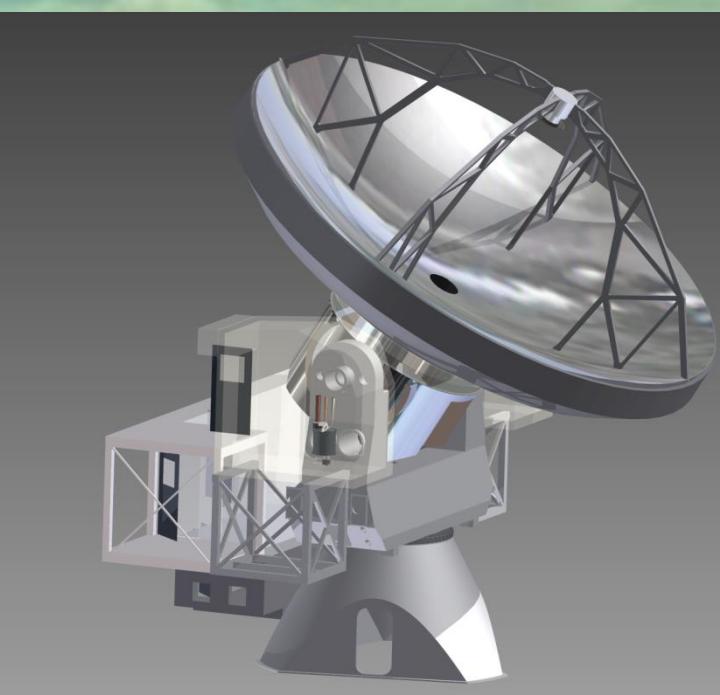
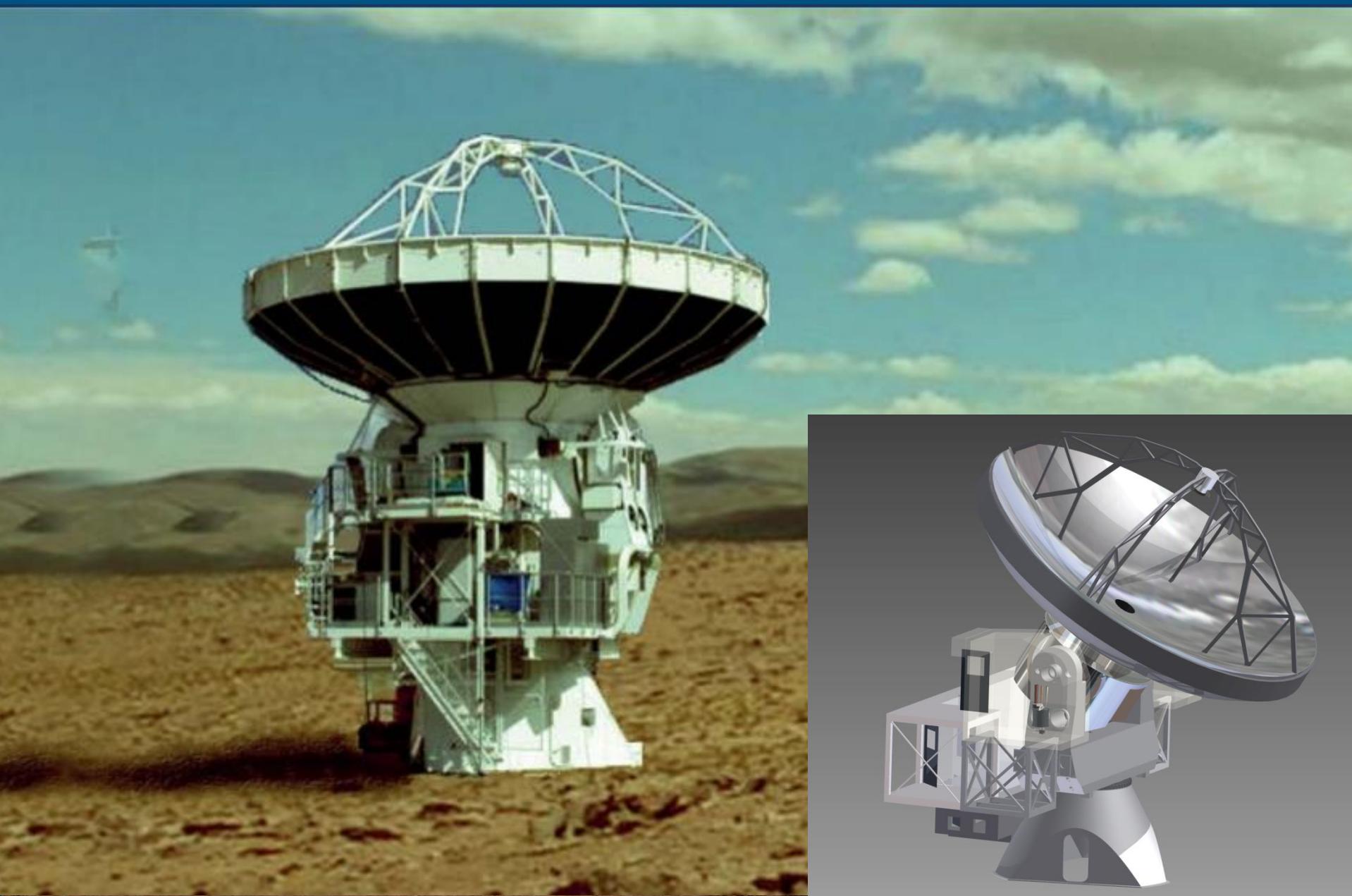


ALMA Observatory

LLAMA



NINS
NSF





ALMA Observatory

CTA



NINS
INSI



ALMA and Universities

- An important goal for ALMA is to generate knowledge transference with universities.
- Students gain experience in software engineering while being inside the challenging astronomy industry.
- Students gains visibility and curriculum for their resume. Even for jobs outside of the industry is a good entry.



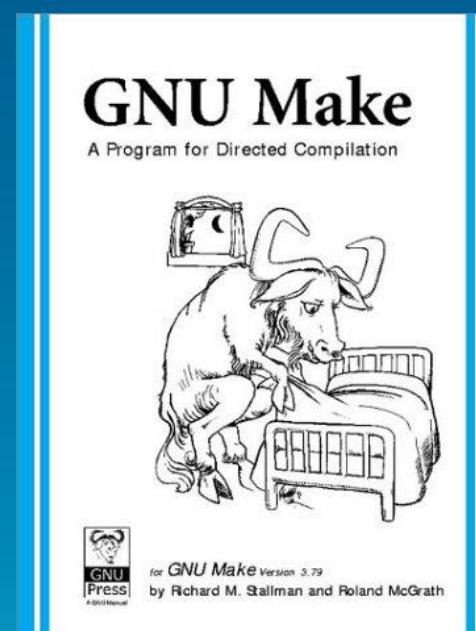
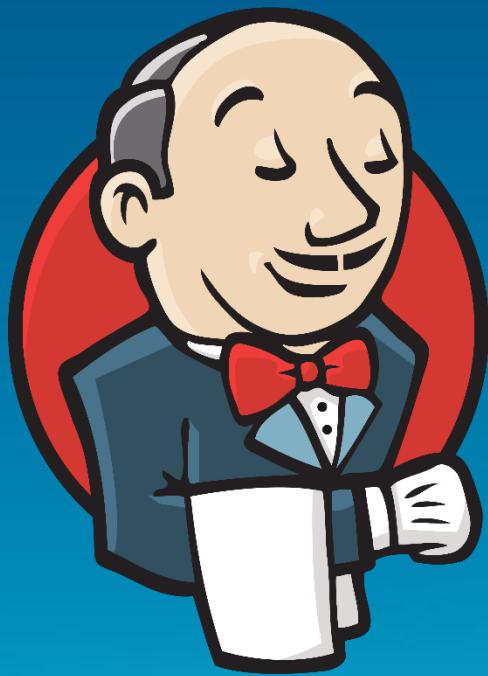
What are our projects in ACB

<https://github.com/ACS-Community/ACS/wiki/Project-Proposals>



Achieve a complete Continuous Integration





Porting to other platforms

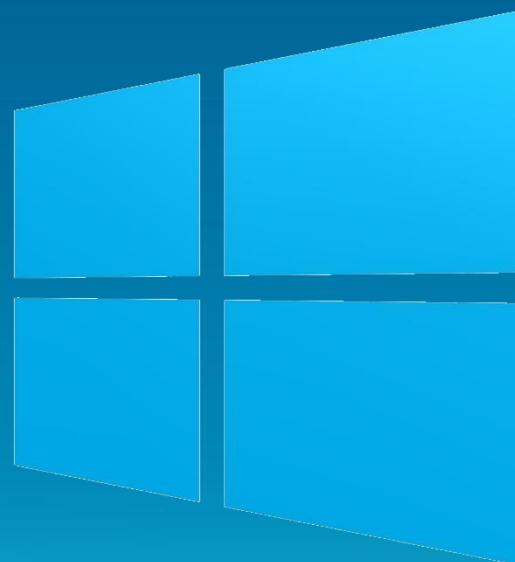




ALMA Observatory



NINS The National Institute of Natural Sciences (NINS) logo, featuring a circular emblem with stars.



HW and BACI Languages support



CAN



Linux 3.12.13-r125-018884-ge89f547 #2 SMP PREEMPT RT Tue May 6 28:38:29 CEST 2014
processor : 10
model name : ARMv7 Processor rev 2 (v7l)
features : +mp half thumb fastthumb vt8 edsp thumbneon vfpv3 idc vfpv3
CPU implementer : 0x41
CPU architecture: 7
CPU variant : 0x3
CPU part : 0x008
CPU revision : 3

Hardware : Generic AM335X (Plastered Device Tree)
Revision : 0000
Serial : 0000000000000000
Setting sched_rt_nrttime_us to 3000000
Starting "background -1 -1"
Starting "cyclictest -r 1000 -L1000000 -n"
Running in process mode with 30 groups using 40 file descriptors each (<= 400 tasks)
Each worker will pass -1 messages of 100 bytes
/dev/loop_0, latency set to 0us
0.0 (0.00) P(0.00) U(0.00) S(0.00) N(0.00) D(0.00) 0.00 Avg: 0.00 Max: 0.00

real: 16448.425s
user: 0m00.00s
sys: 0m07.438s
avg: 0m07.438s



Code generation for all languages



STANDARD



TMcdb tools, and other DB backends





ALMA Observatory



NINS The logos for NINS and the National Science Foundation (NSF), which are circular with blue and yellow stars.



The MySQL logo, which consists of the word "MySQL" in a stylized font where the "M" is dark teal and the "SQL" is orange, followed by a trademark symbol (TM).



Provide databases backends for monitoring





Open source alternatives for Bulk Data Transfer





Alternatives for Notification Channel





To introduce more members to the community



Opportunities for Students



- Summer internships (práctica): every year there is a call for interns.
Next one this year!
 - Announcement in september 2015 (www.almaobservatory.cl)
- Undergraduate and grad theses.
- Internship (pasantía): opportunity to either work in ALMA or LLAMA while obtaining your degree.



You convinced me, I want to help...



and I don't have any ideas?

See this wiki page for project ideas: <https://github.com/ACS-Community/ACS/wiki/Project-Proposals>



and I do have a particular idea to add to the ACS framework

Excellent! Just do it! We only ask to put yourself in contact with the Technical Board, and for minimal documentation for its future maintenance of the project. Fork and when done, send us the pull request.



and I do have a particular idea that uses the ACS framework

Excellent! We totally support these projects, and the more users we
and in the ACS Community Branch, the better.

We can provide you with insights, and answers questions on ACS
usage.



and I would like to help an ongoing project?

Make contact with the person in charge of the project in question.
(look for the corresponding ticket in <https://github.com/ACS-Community/ACS/wiki/Project-Proposals>)

They will more than welcome you :D





Thanks! Questions?

Further information:

<http://www.almaobservatory.org>

Contact point: ahoffsta@alma.cl

The Atacama Large Millimeter/submillimeter Array (ALMA), an international astronomy facility, is a partnership of Europe, North America and East Asia in cooperation with the Republic of Chile. ALMA is funded in Europe by the European Organization for Astronomical Research in the Southern Hemisphere (ESO), in North America by the U.S. National Science Foundation (NSF) in cooperation with the National Research Council of Canada (NRC) and the National Science Council of Taiwan (NSC) and in East Asia by the National Institutes of Natural Sciences (NINS) of Japan in cooperation with the Academia Sinica (AS) in Taiwan. ALMA construction and operations are led on behalf of Europe by ESO, on behalf of North America by the National Radio Astronomy Observatory (NRAO), which is managed by Associated Universities, Inc. (AUI) and on behalf of East Asia by the National Astronomical Observatory of Japan (NAOJ). The Joint ALMA Observatory (JAO) provides the unified leadership and management of the construction, commissioning and operation of ALMA.