The ALMA Proposal Preparation Process

Atacama Large Millimeter/submillimeter Array
Expanded Very Large Array

Proposal Checklist

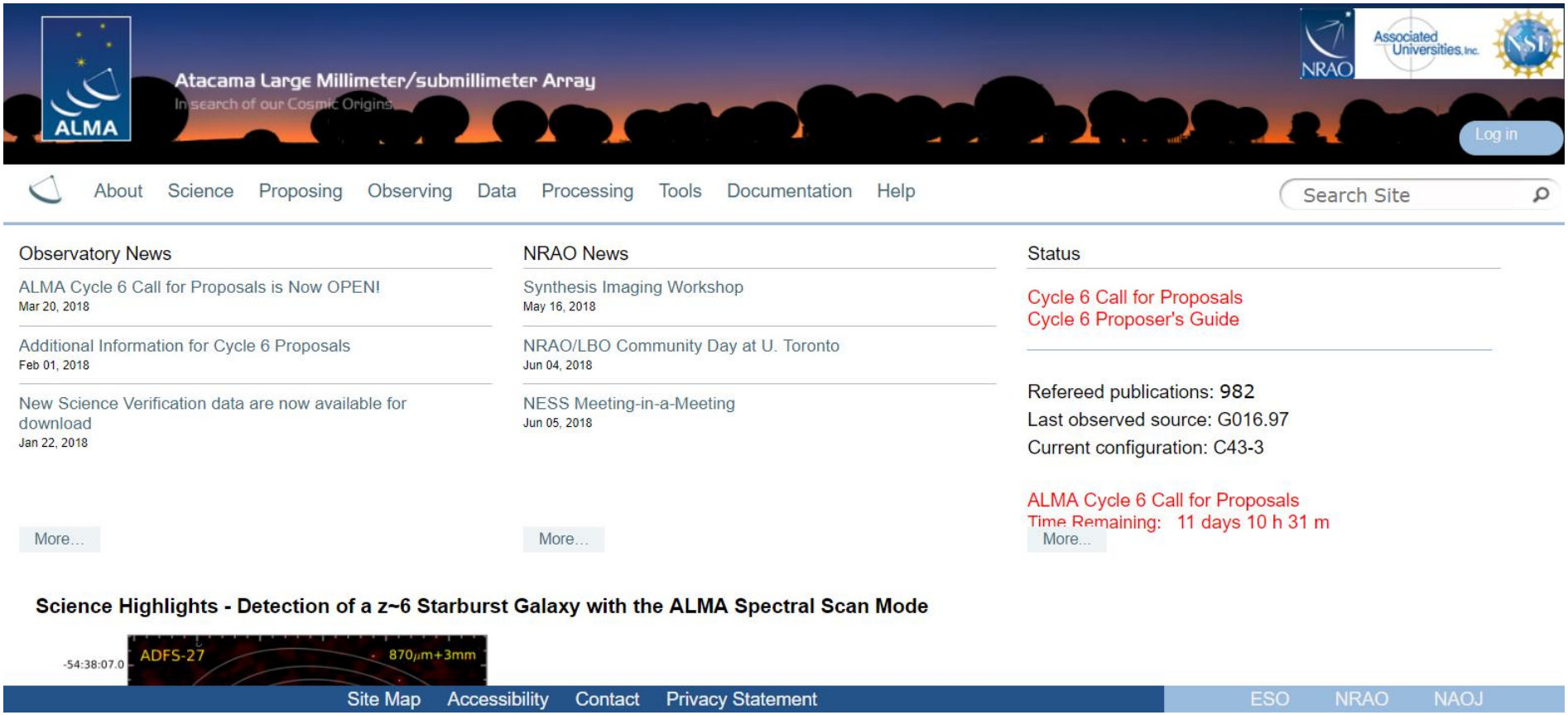
- ✓ Read the relevant documentation
- ✓ Create an ALMA account
- ✓ Download the Observing Tool (OT)
- ✓ Prepare the Science Case
- ✓ Prepare Science Goals within the OT
- ✓ Submit!

Documentation

- ALMA Primer
- Proposer's Guide (!)
- OT Quickstart Guide
- OT Users Manual
- OT Video Tutorials
- Knowledgebase / FAQs
- Technical Handbook

All this and more at: almascience.nrao.edu

almascience.nrao.edu



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Cycle 6 Timeline

20 Mar. 2018	Cycle 6 Call for Proposals
10 Apr. 2018	Today
19 Apr. 2018*	Proposal Deadline!
End of Jul. 2018	Results of proposal review process announced
Sep. 2018	Deadline for PIs to submit phase 2
Oct. 2018	Start of Cycle 6
Sept. 2019	End of Cycle 6

***Thursday April 19 at 15 UT = 8 am in Arizona (MST)**

Science Case

Free-form PDF document

- Latex template available
- 12+ font (including captions, tables and refs)
- English only
- 20 MB file size
- 4 pages (6 for Large Projects)

Must include:

- Astronomical importance and immediate observing goals
- Why ALMA?!
- Brief justification of requested sensitivity and resolution

May include:

- Figures, tables, references
- Simulations

“Regular” Proposals

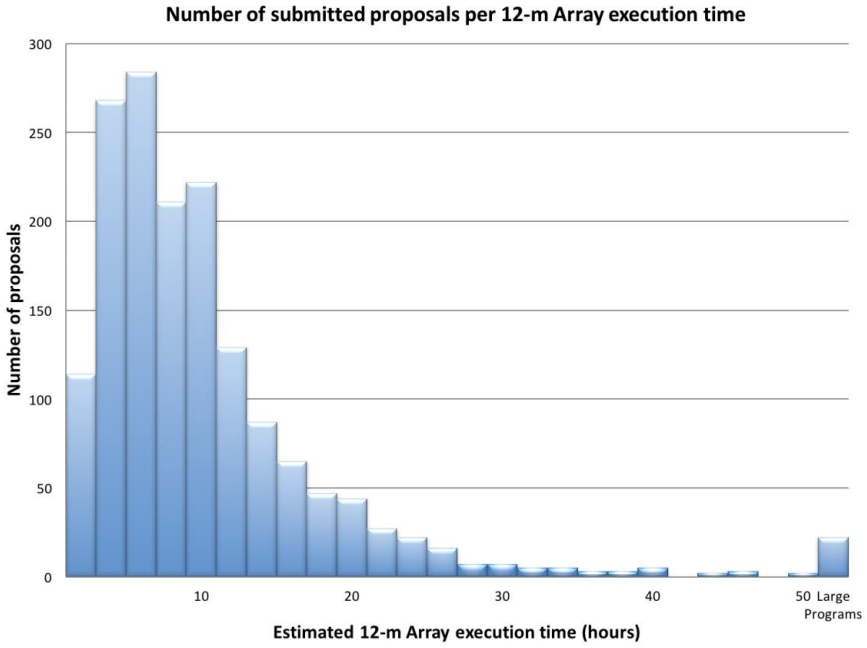
- Can use 12-m array or standalone ACA
- Can included standard or non-standard modes
- Can include time-constrained observations
- Non-Regular Proposals:
  - Large Programs
  - Target of Opportunity
  - Very Long Baseline Interferometry
  - Director Discretionary Time

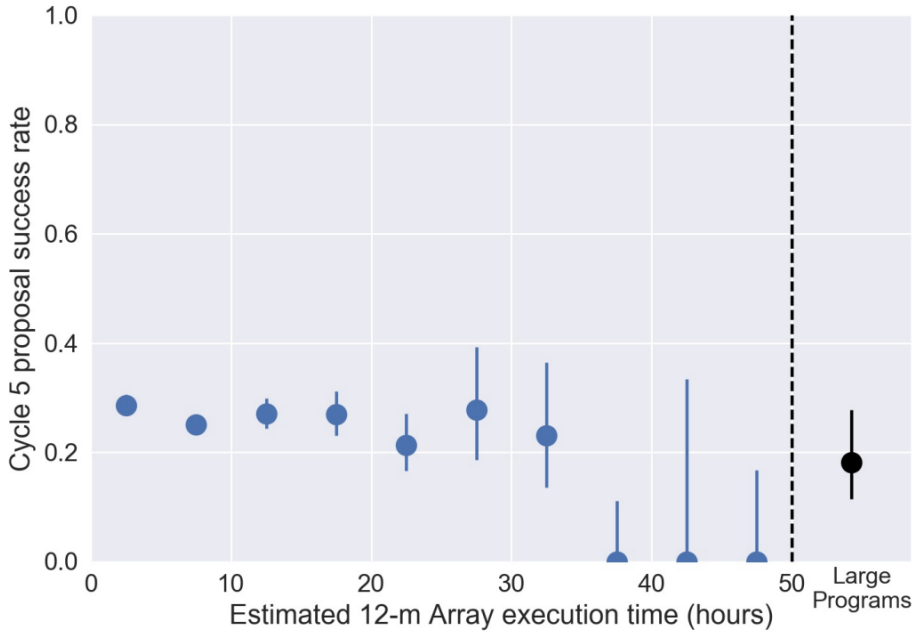
Large Projects

- Up to 15% of available time
- Any 12-m project >50 hours, or standalone ACA > 150 hours
- Only standard observing modes allowed
- No time-critical or ToO observations allowed

A Note On Proposal Length

- Acceptance rate does **NOT** depend on proposal length
- Encourage… Medium length 10-25 hour proposals
  ACA-only proposals (often undersubscribed)





ToO (Target of Opportunity)

- Transient events occurring at frequent and unpredictable intervals (e.g. gamma ray bursts)
- Not for proposals simply with time constraints

VLBI (Very Long Baseline Interferometry)

- Up to 5% of available time

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DDT (Director's Discretionary Time)

- Up to 5% of available time
- Submission at any time. Is for current cycle

1. Observation of a sudden and *unexpected* astronomical event.
2. Observations of a highly competitive scientific topic, motivated by recent developments.
3. Follow-up observations of a program recently conducted with ALMA or any other observing facility, where quick implementation is expected to provide breakthrough results.

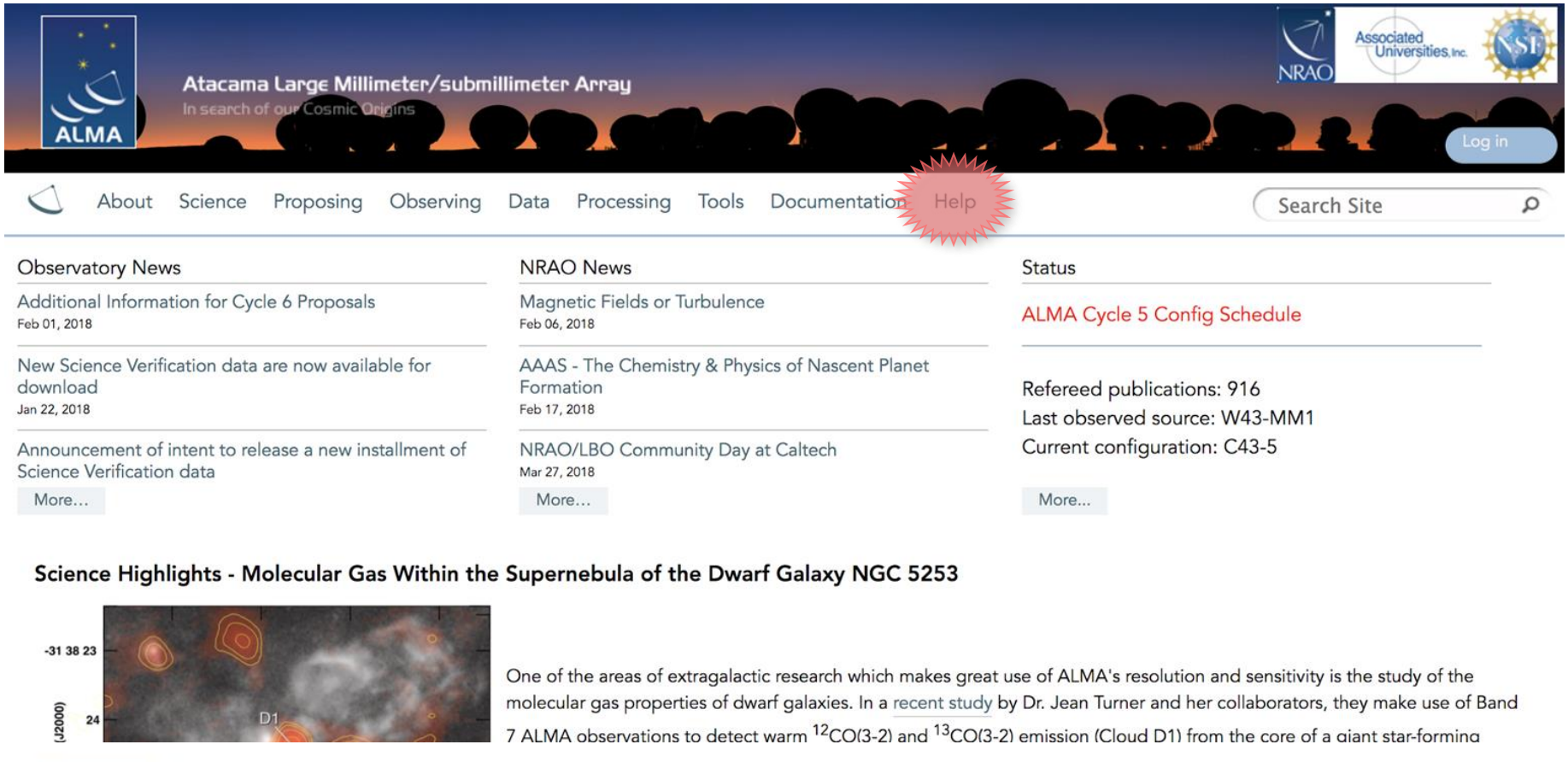
Check For Duplications

- A “duplication” has similar sensitivity *and* frequency coverage *and* angular resolution *and* spatial coverage as a previous observation.
- Duplications not allowed, unless scientifically justified
  - Time-variable objects
  - Mosaic where excluding duplicate pointings would be inefficient
  - Spectral scan where excluding duplicate frequencies would be inefficient
- PIs are responsible for checking their proposed observations against
  - The Archive
  - Spreadsheet list of unobserved Grade A programs
- PIs will not be penalized for proposing duplications of previous cycle observations if they had no way to know about them.

Additional things to bear in mind

- Be aware of source declination (< -65 or > +20) particularly for compact configurations (antenna shadowing). Max declinations limit is +47.
- Primary beam effects? Source should be within inner 1/3 of the FOV.
- High data rate (70 MB/s limit) – can you spectrally average?
- Anticipate high dynamic range (ratio of peak flux / rms)? Typically can achieve around 100, but more limited) in bands 9 and 10 (around 50. If this limits sensitivity, can use “self-calibration”.
- Also consider spectral dynamic range (limits detection of weak lines on top of strong continuum).
- Enough Earth rotation to sample uv plane? May need longer time than that set by sensitivity (override OT time estimate). Worse for more extended configurations. Use image simulator!

ALMA Helpdesk



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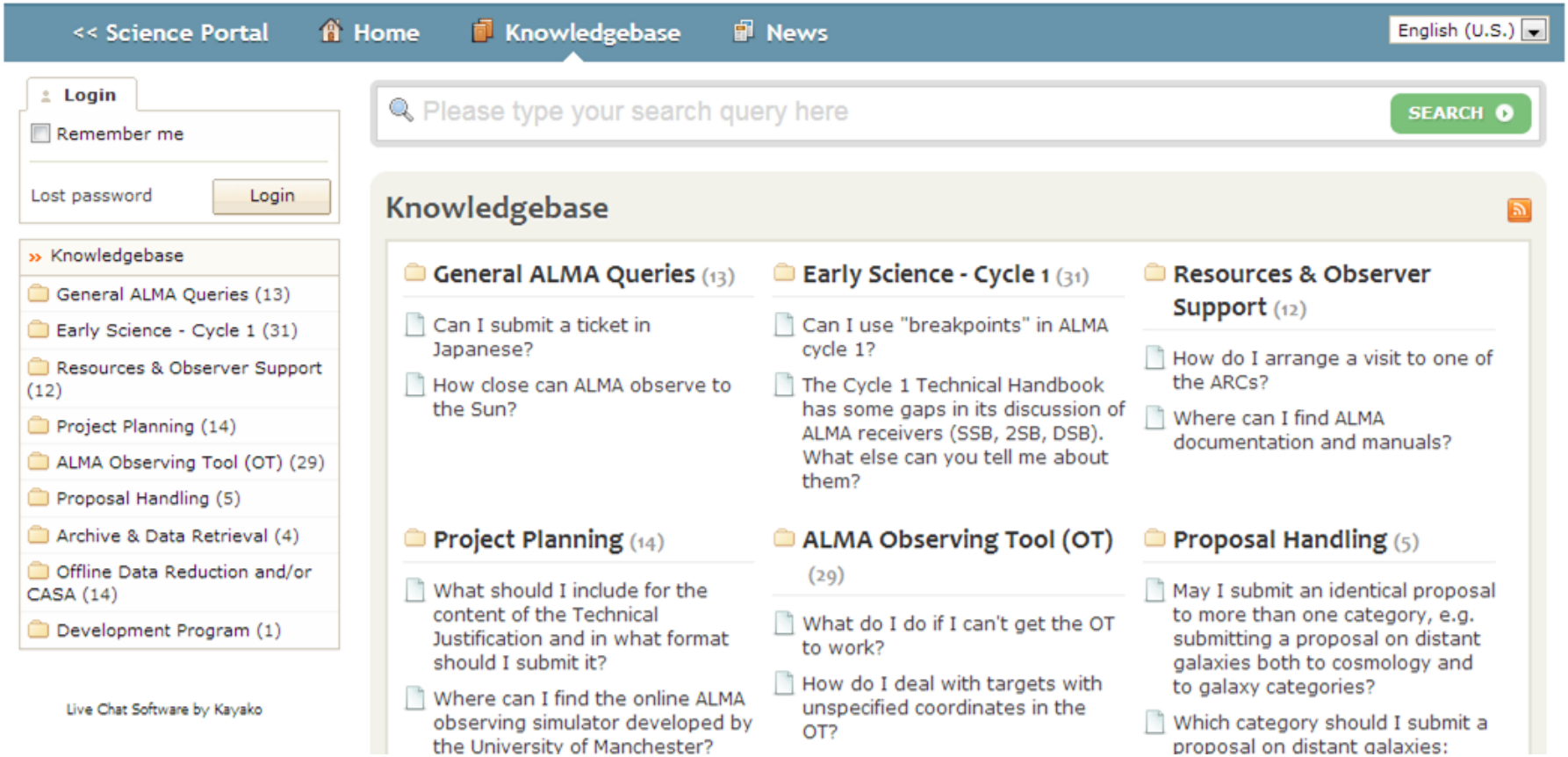
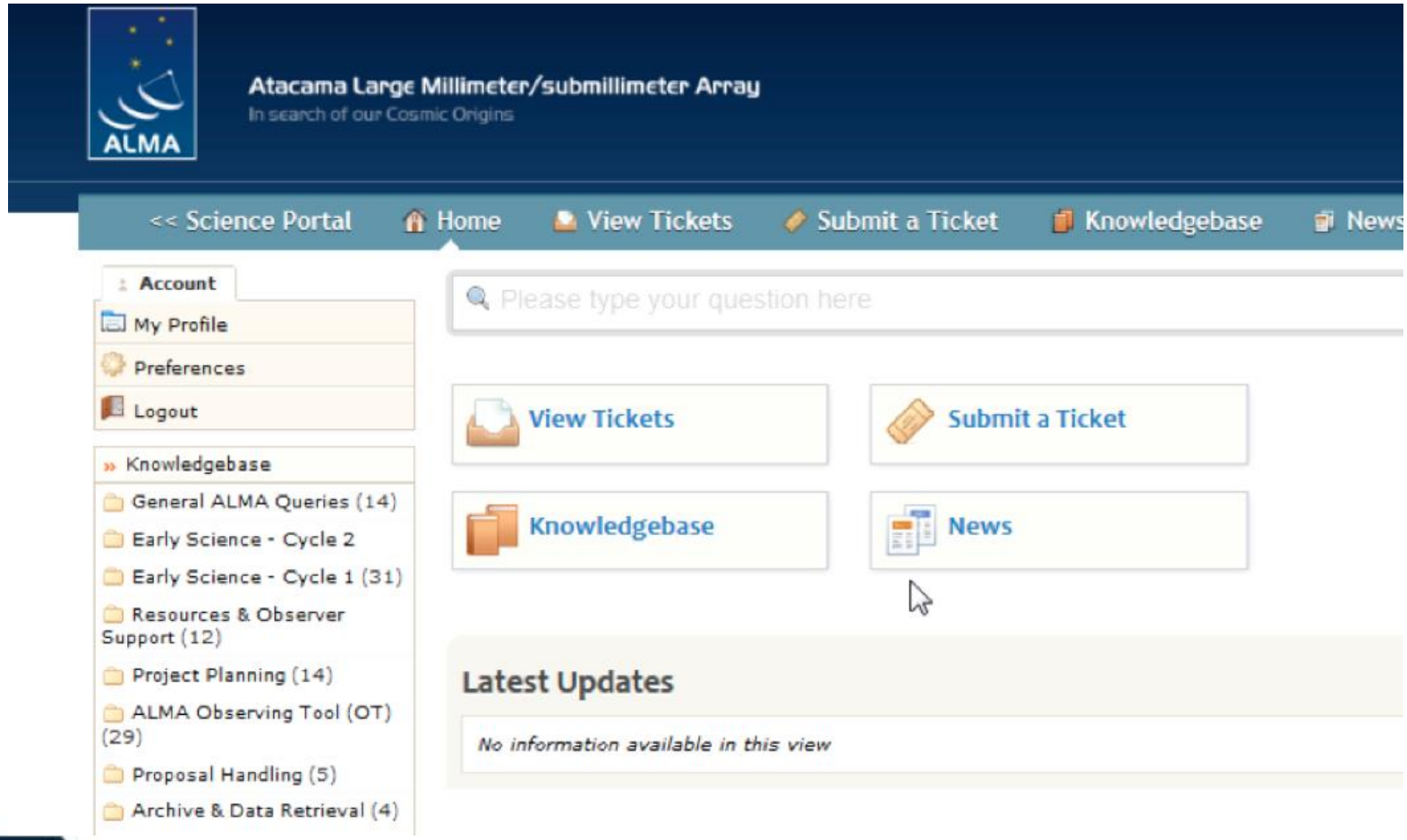


ALMA Helpdesk (logged in view)



ALMA

For more info:

https://almascience.nrao.edu/

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 and operation of ALMA.

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