

The Web-Based OT

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Overview

A large satellite dish antenna structure is shown against a dark blue sky. The dish is composed of a complex metal lattice of beams and supports, with a large, curved surface. The structure is illuminated from the side, creating strong highlights and deep shadows. The background is a clear, dark blue sky.

- What is the Observing Tool?
- Hands-on with the OT
 - Highlight some important differences from the desktop OT of the past

What is the Observing Tool?

- Tool used to prepare your ALMA observing proposal
- At a high level, it includes:
 - Title/Abstract/Scientific Justification
 - List of co-Is
 - Technical setup
 - Lines/continuum
 - Integration times
 - Bandwidth/velocity resolution
 - Technical justification for these choices

Distributed Peer Review

- ALMA now operates a double-blind DPR system
 - This means anonymise your proposals (apart from the co-I list, which is stripped out before review)
- Based on your selected expertise and the proposal itself, for each proposal you PI you will get 10 proposals to review
- If you don't have a PhD, you must also select a mentor who does, who must double-check your reviews
 - Generally this should be your supervisor, but it can be another co-I – make sure to ask!
- Give **plenty** of time to review proposals
 - Don't be the person who skims through them, misses details and gives an unrepresentative report

What's new this Cycle?

- We have transitioned from a desktop-based OT to a web-based OT
- Benefits include
 - Continuous updates, rather than having to check for potential patches
 - More responsive, particularly for target resolution and line selection
 - A much more modern UI, and general user experience improvements
- This does come with some new things to be aware of
 - Will highlight these throughout

A note on AI

- AI may be used in proposal preparation, to refine and organize text
 - Any content produced must be accurate, original, and plagiarism-free
 - Any quoted material must be properly cited
- For proposal **review**, the use of AI can **only** be used to improve readability of reviews
 - Proposals are confidential, and must **not** be input in any part into AI tools
 - AI cannot be used to assess strengths, weaknesses, or to recommend rankings
- Failure to adhere to this will lead to disqualification

Accessing the OT

A large radio telescope dish is shown from a low angle, looking up. The dish is composed of many small, square panels. A complex metal support structure, consisting of many beams and joints, is visible. A cylindrical component, likely a feed horn or receiver, is mounted on the structure. The background is a clear, dark blue sky.

<https://cycle-13.sps.alma.cl/ngot/>

WARNING

This is the live OT. If you hit the submit button here, you will actually submit an ALMA proposal!



 **Welcome Thomas Williams**

What would you like to do?

 Create a new proposal

 Retrieve a project from the server

 Open project as new proposal


or

 Log out

Start from scratch →

Get inspiration →

Resubmissions →

A large satellite dish antenna structure is shown against a dark blue sky. The dish is composed of a complex network of white metal trusses and panels. A prominent feature is a large, white, cylindrical component mounted on the right side of the structure, likely a feed horn or part of the antenna's pointing mechanism. The overall scene is dimly lit, suggesting dusk or dawn.

N.B. the “open as new proposal” is essentially a way to import proposals from previous Cycles. Otherwise, the OT does not allow for uploading of old .aot files

Top bar

New proposal

Open as
new
proposal

Sensitivity
calculator

Open
documentation

Validate



Submit project

tgwilliams

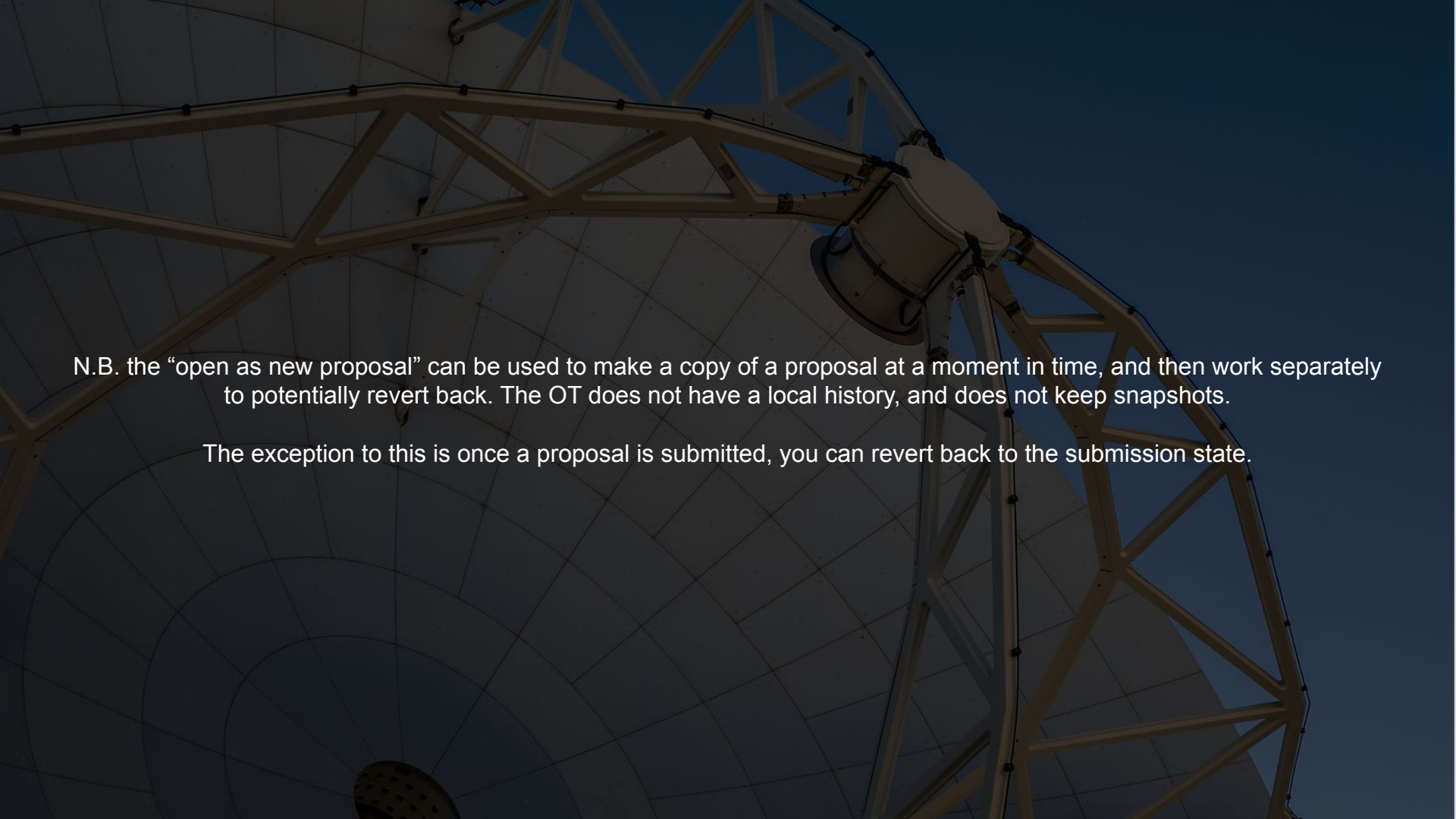


Open from server

Revert to
submitted
state

Show antenna
configs

Generate PDF
of whole
proposal

A large satellite dish antenna structure is shown against a dark blue sky. The dish is composed of a complex metal lattice of beams and supports. A large, white, cylindrical component, likely a feed horn or part of the antenna's receiver, is mounted on the right side of the structure. The overall scene is dimly lit, suggesting dusk or dawn.

N.B. the “open as new proposal” can be used to make a copy of a proposal at a moment in time, and then work separately to potentially revert back. The OT does not have a local history, and does not keep snapshots.

The exception to this is once a proposal is submitted, you can revert back to the submission state.

? Main Project Information

Project Name

Project name is required

Assigned Project Code

None Assigned

? Proposal Information

Proposal cycle

2026.1

Abstract

Abstract is required

 Generate PDF of Whole Proposal

? Proposal Type

Regular Target Of Opportunity VLBI Large Program Phased Array

? Scientific Category

Cosmology and the High Redshift Universe Galaxies and Galactic Nuclei ISM, star formation and astrochemistry Circumstellar disks, exoplanets and the solar system
 Stellar Evolution and the Sun

A scientific category is required.

? Joint Proposals

Is this a Joint Proposal?

Yes No

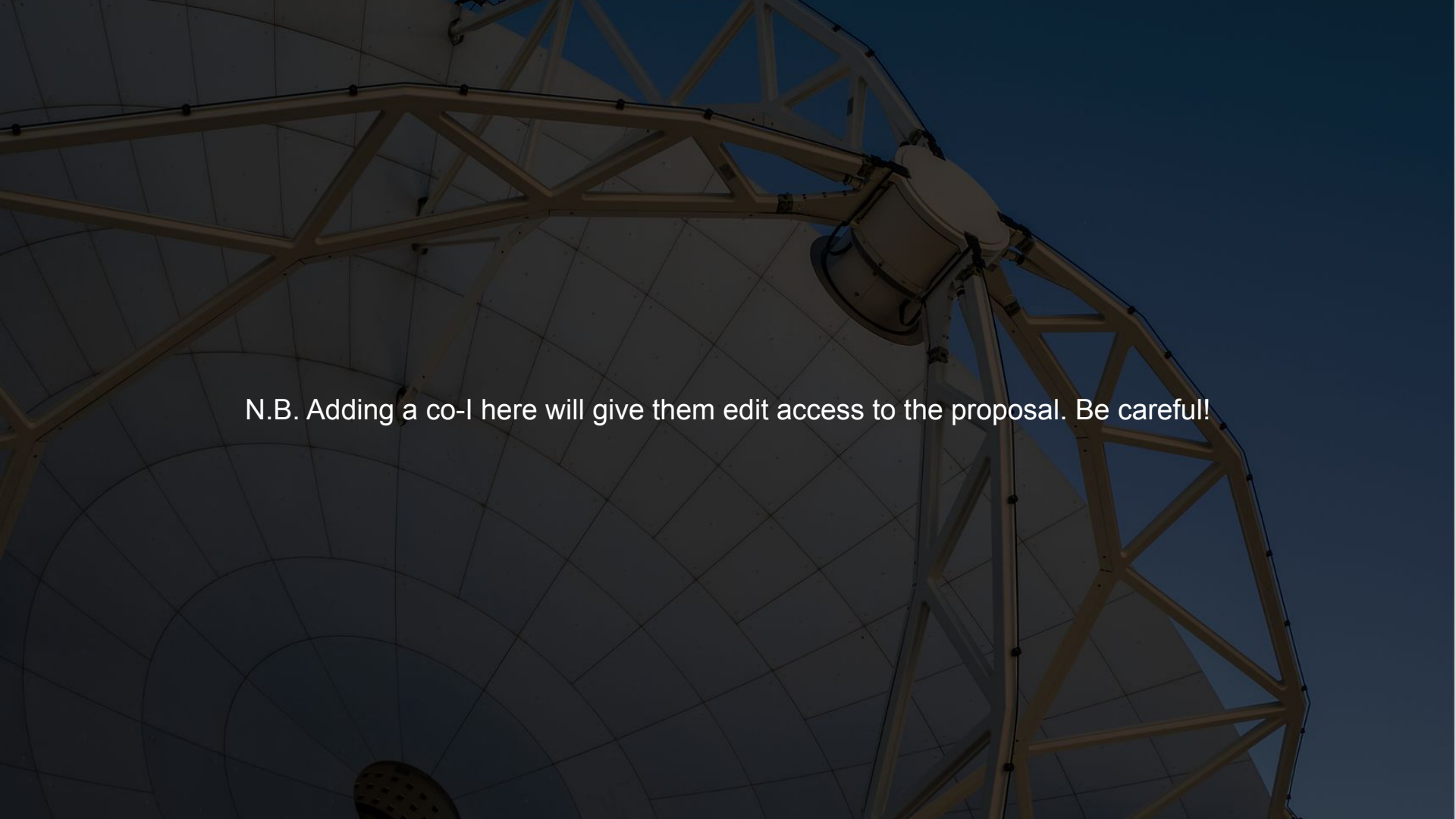
<https://almascience.nrao.edu/proposing/proposers-guide#autotoc-item-autotoc-18>

? Investigators

- Select PI
- Add CoPI
- Add Col
- Add from project
- Select all collaborator(s)
- Unselect collaborator(s)
- Remove collaborator(s)

| Reviewer | Type ↓ | Full Name | Affiliation | ALMA ID | Executive |
|-------------------------------------|--------|-----------------|--|------------|-----------|
| <input checked="" type="checkbox"/> | PI | Thomas Williams | Jodrell Bank Centre for Astrophysics, Manchester, University of | tgwilliams | Europe |

0 selected /1 collaborator(s) found

A large satellite dish antenna structure is shown against a dark blue sky. The dish is composed of a complex network of white metal beams forming a grid pattern. A large, white, cylindrical antenna horn is mounted on the right side of the structure. The overall scene is dimly lit, suggesting dusk or dawn.

N.B. Adding a co-I here will give them edit access to the proposal. Be careful!

? Reviewer Information

Reviewer has a PhD?

No Yes

Mentor name



A mentor must be selected

Select mentor

Please designate a reviewer who will participate in the distributed review process. The reviewer may be the PI of the proposal or one of the other investigators.

A student (without a PhD) may serve as the reviewer only if they are the PI of the proposal and a mentor (with a PhD) is identified.

The mentor does not need to be an investigator on the proposal.

Reviewers are requested to:

- Abide by the maximum number of Proposal Sets that are to be assigned for review to any individual (refer to the Proposer's Guide for more information).
- Update their user profiles with combinations of scientific categories and keywords which describe their area(s) of expertise using the new 'Expertise' tab in the link below. Available expertise information will be used in the distribution of proposal assignments.

<https://asa.alma.cl/UserRegistration/secure/updateAccount.jsp>

? Science Case

Please ensure that your science case is properly anonymized following [instructions on the Science Portal](#).

Science Case (Mandatory, PDF, 4 pages max.)

It is mandatory to attach a Science Case.

 Attach  View  Remove

? Duplicate Observations

Briefly justify any new observations that duplicate archival data or accepted programs.

Information regarding the ALMA Duplication Policy and how to search archival data and accepted programs can be found at: <http://almascience.org/proposing/duplications>

Science Goals (1)



Project Overview

Time Summary

Data Volumes & Data Rates



[Go to Selected](#) [Expand All](#) [Collapse All](#)

Science Goal

General

Field setup



Spectral Setup

Calibration Setup

Control and Performance

Technical Justification

| Science Goal Name | No. Sources | Band | Spec. Type | No. Spec. Wind. | Pol. | Calibration Setup | Rep. Freq. | Ang. Res. | Largest Scale | Sens. |
|-------------------|-------------|-----------|---------------|-----------------|------|-------------------|-------------|----------------|-----------------|------------|
| Science Goal | 1 | undefined | Spectral Line | 0 | Dual | System | 0.00000 GHz | 0.00000 arcsec | -1.00000 arcsec | 0.00000 Jy |

General

Science Goals (1)

+

Enter a name and description for the purpose of this science goal. This text is optional but you may find it useful to keep a note.

Go to Selected Expand All Collapse All

M83

General

Field setup

M83

? General (Optional)

Science goal name: M83 ✓

Description: CO observations of M83 ✓

Field Setup (1)

Source

Source name:

Choose a Solar System Object?

System: Sexagesimal display

| | | | |
|----------|--|-------------------------------------|----------|
| RA | <input type="text" value="13:37:00.9192"/> | <input checked="" type="checkbox"/> | hh:mm:ss |
| Dec | <input type="text" value="-29:51:56.740"/> | <input checked="" type="checkbox"/> | dd:mm:ss |
| Parallax | <input type="text" value="0.00000"/> | <input checked="" type="checkbox"/> | mas |
| PM RA | <input type="text" value="0.00000"/> | <input checked="" type="checkbox"/> | mas/yr |
| PM Dec | <input type="text" value="0.00000"/> | <input checked="" type="checkbox"/> | mas/yr |

Source Radial Velocity: km/s

z: Doppler Type:

Target Type:

ICRS SIN

FOV Parameters

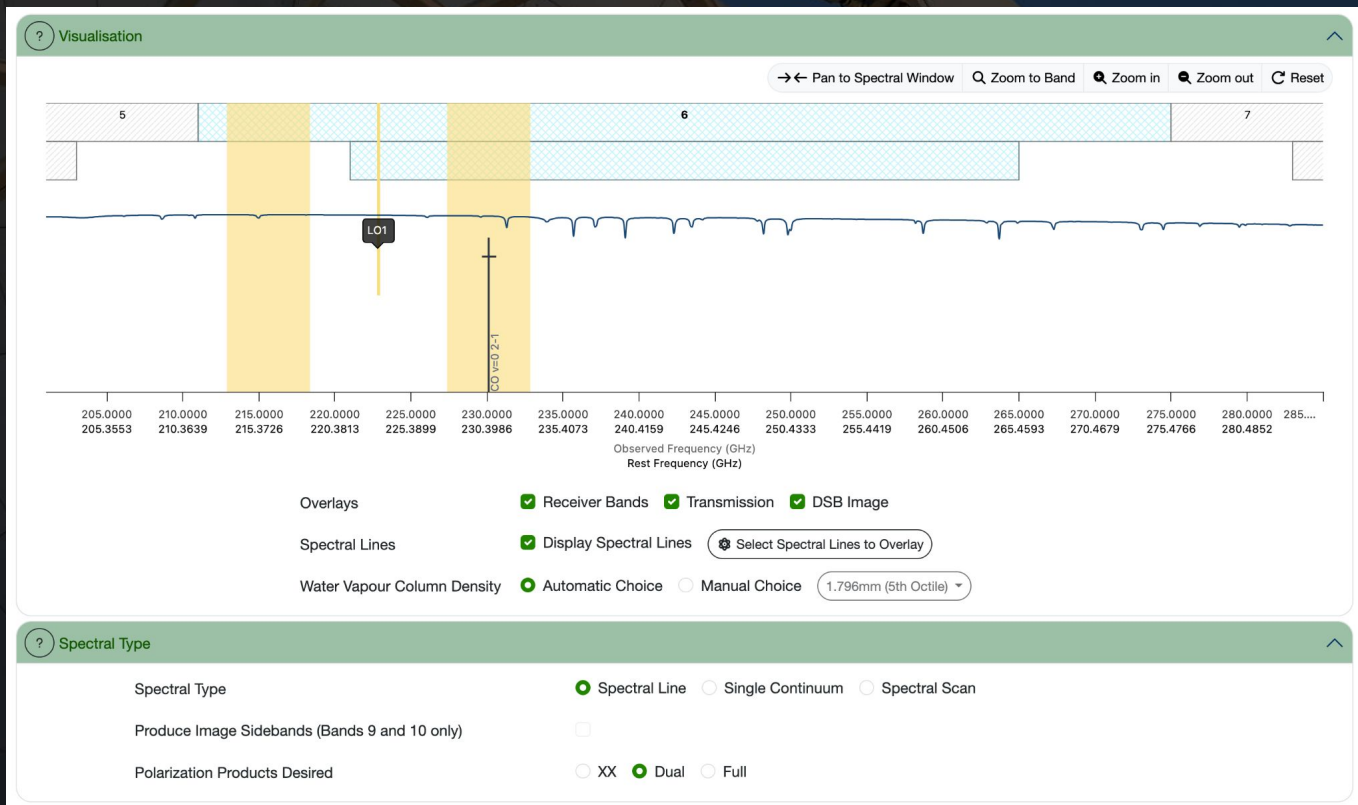
| | | |
|--------------------------------|---------------------------------------|--------|
| Representative Frequency (Sky) | <input type="text" value="0.00000"/> | GHz |
| Array Type | <input checked="" type="radio"/> 12m | |
| Antenna Beamsize (HPBW) | <input type="text" value="Infinity"/> | arcsec |
| Show Antenna Beamsize | <input checked="" type="checkbox"/> | |

Field Setup (2)

? Expected Source Properties

| | | | |
|--|-----------|---|----------|
| Peak Continuum Flux Density per Synthesized Beam | 0.00000 | ✓ | Jy ▾ |
| Continuum Linear Polarization | 0.00000 | ✓ | per cent |
| Continuum Circular Polarization | 0.00000 | ✓ | per cent |
| Peak Line Flux Density per Synthesized Beam | 100.00000 | ✓ | mJy ▾ |
| Line Width | 500.00000 | ✓ | km/s ▾ |
| Line Linear Polarization | 0.00000 | ✓ | per cent |
| Line Circular Polarization | 0.00000 | ✓ | per cent |

Spectral Setup (1)



A large satellite dish antenna structure is shown against a dark blue sky. The dish is composed of a complex network of white metal beams forming a grid pattern. A cylindrical component, likely a feed horn or local oscillator (LO), is mounted on the right side of the dish. The overall scene is dimly lit, suggesting dusk or dawn.

N.B. unlike desktop OT, you cannot click and drag the LO around

Field Setup (2)

Baseband-1

[+ Add spectral window centred on a spectral line](#) [+ Add spectral window manually](#) [Delete all](#)

| Fraction | Centre Freq (rest, hel) | Centre Freq (sky, hel) | Transition name | Bandwidth, Resolution (smoothed) | Spec. Avg. | Representative W |
|------------|-------------------------|------------------------|-----------------|---|------------|------------------|
| 1 (Full) ▾ | 230.53800 GHz | 230.13916 GHz | CO v=0 2-1 | 937.500 MHz(1221 km/s), 564.453 kHz(0.735 km/s) (2-bit) ▾ | 2 ▾ | |

Show image spectral windows

Baseband-2

[+ Add spectral window centred on a spectral line](#) [+ Add spectral window manually](#) [Delete all](#)

| Fraction | Centre Freq (rest, hel) | Centre Freq (sky, hel) | Transition name | Bandwidth, Resolution (smoothed) | Spec. Avg. | Representative W |
|------------|-------------------------|------------------------|-----------------|---|------------|-----------------------|
| 1 (Full) ▾ | 220.398684 GHz | 220.01739 GHz | 13CO v=0 2-1 | 937.500 MHz(1277 km/s), 564.453 kHz(0.769 km/s) (2-bit) ▾ | 2 ▾ | <input type="radio"/> |

Show image spectral windows

Baseband-3

[+ Add spectral window centred on a spectral line](#) [+ Add spectral window manually](#) [Delete all](#)

| Fraction | Centre Freq (rest, hel) | Centre Freq (sky, hel) | Transition name | Bandwidth, Resolution (smoothed) | Spec. Avg. | Representative W |
|------------|-------------------------|------------------------|-----------------|--|------------|-----------------------|
| 1 (Full) ▾ | 233.00000 GHz | 232.59690 GHz | Continuum | 1875.000 MHz(2417 km/s), 1.129 MHz(1.455 km/s) (2-bit) ▾ | 2 ▾ | <input type="radio"/> |

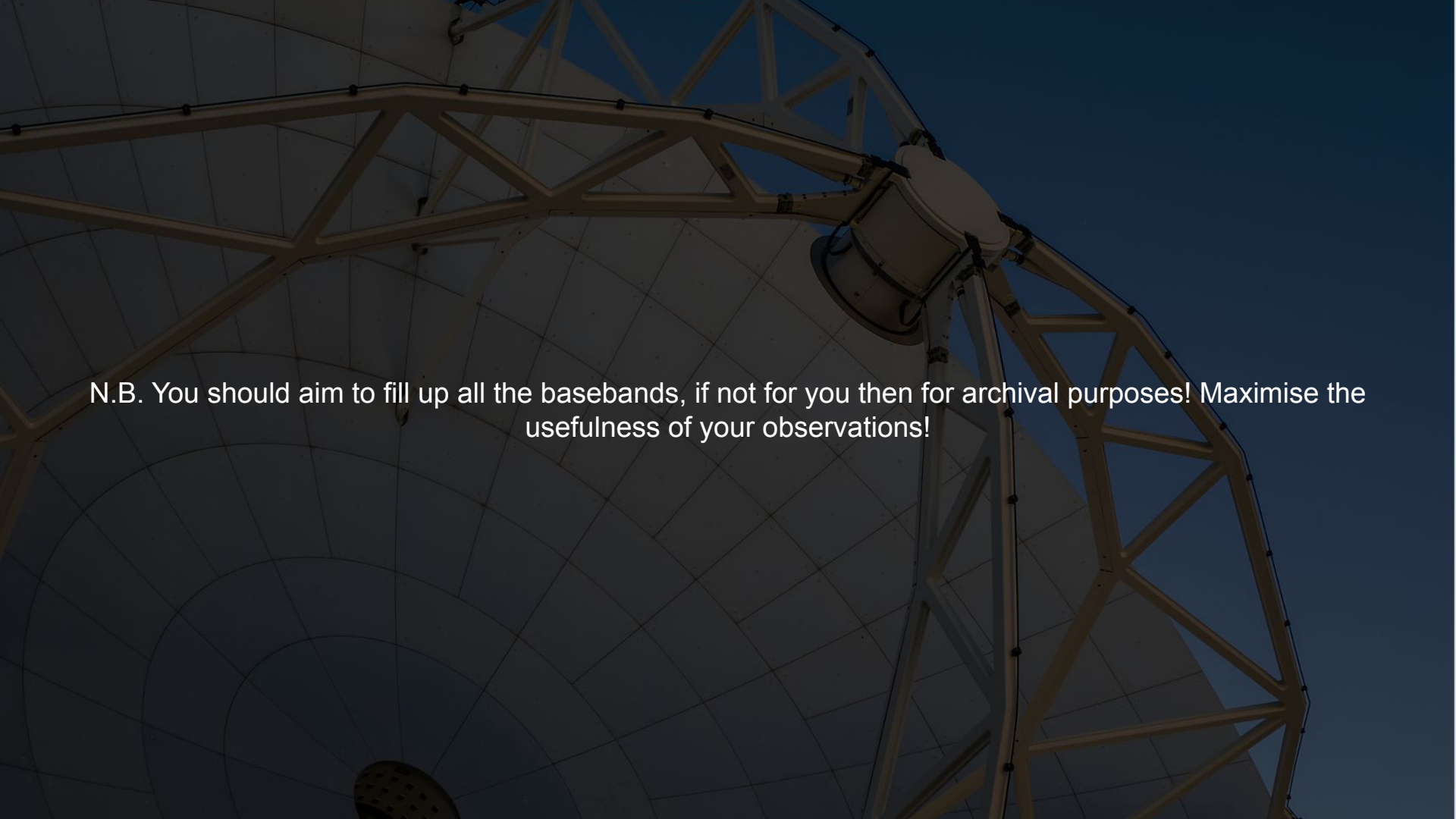
Show image spectral windows

Baseband-4

[+ Add spectral window centred on a spectral line](#) [+ Add spectral window manually](#) [Delete all](#)

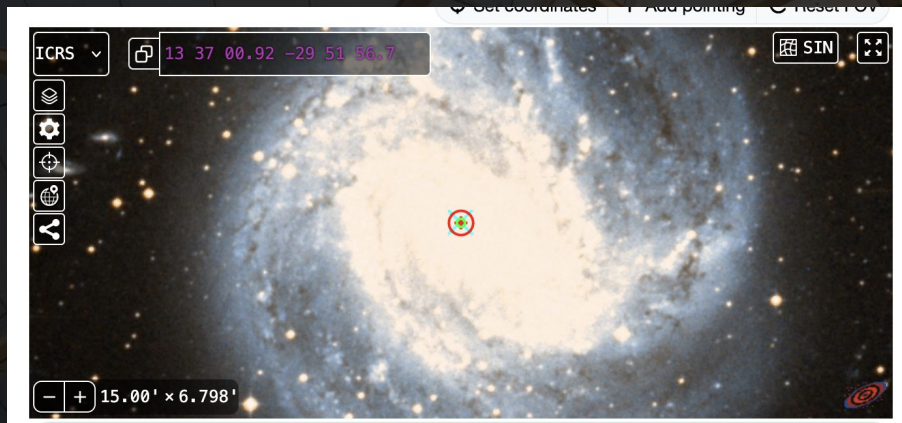
| Fraction | Centre Freq (rest, hel) | Centre Freq (sky, hel) | Transition name | Bandwidth, Resolution (smoothed) | Spec. Avg. | Representative W |
|------------|-------------------------|------------------------|-----------------|--|------------|-----------------------|
| 1 (Full) ▾ | 218.00000 GHz | 217.62285 GHz | Continuum | 1875.000 MHz(2583 km/s), 1.129 MHz(1.555 km/s) (2-bit) ▾ | 2 ▾ | <input type="radio"/> |

Show image spectral windows

A large radio telescope dish is shown from a low angle, looking up. The dish is a large, circular structure with a complex metal support structure. The sky is a deep, dark blue. The text is overlaid on the center of the image.

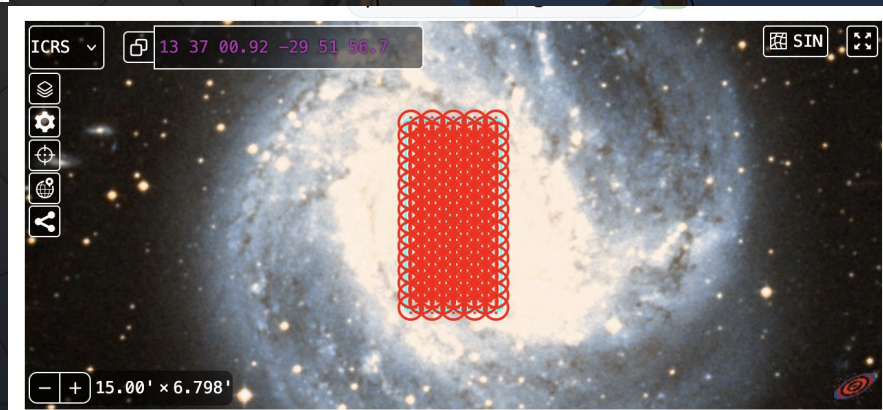
N.B. You should aim to fill up all the basebands, if not for you then for archival purposes! Maximise the usefulness of your observations!

Field Setup (3)



Single pointing

Mosaic



Calibration Setup

Select calibration strategy

? Goal Calibrators ^

- System-defined calibration (recommended) System-defined calibration (force separate amplitude calibration using solar-system object) User-defined calibration

? Astrometry ^

If you wish positional accuracy that is better than that provided by default (see the Proposer's Guide for more information) then select enhanced accuracy.

- Standard positional accuracy (default) Enhanced positional accuracy

? DGC Override (observatory-use only) ^

DGC Override

Control and Performance (1)

✔ Desired Performance

🕒 Planning and Time Estimate

⚙️ Configuration Information

Antenna Beamsize ($1.13 * \lambda/D$)

12m 25.30186 arcsec

7m 43.37462 arcsec

Number of Antennas

12m 43

7m 10

TP 3

ACA 7m Configuration

Most compact 12m configuration

Most extended 12m configuration

Longest baseline

49 m

160.7 m

16196.6 m

Synthesized beamsize

5.43344 arcsec

1.44398 arcsec

0.02216 arcsec

Shortest baseline

9 m

15.1 m

256.1 m

Maximum recoverable scale

29.08097 arcsec

12.46555 arcsec

0.21621 arcsec

Control and Performance (2)

✓ Desired Performance

🕒 Planning and Time Estimate

⚙️ Configuration Information

? Desired Performance

Desired Angular Resolution

Custom (Single/Range) Any Standalone ACA

Enter the desired minimum and maximum angular resolution. For a single angular resolution, please enter the same value twice.

0.80000 ✓ arcsec to 1.20000 ✓ arcsec

Largest Angular Structure in source

100.00000 ✓ arcsec

Desired mosaic sensitivity

0.50000 ✓ K equivalent to 18.96723 mJy @ 0.936 " will provide 304.07342 mK @ 1.20 "

Bandwidth used for Sensitivity

User Frequency Width 2.50000 ✓ km/s

Override OT's sensitivity-based time estimate (must be justified)

Yes No

Simultaneous 12-m and ACA observations

Yes No

Are the observations time-constrained?

Yes No

N.B. change requests to increase observability by changing angular resolution/configuration are **not** allowed. Get it right here!

Control and Performance (3)

✔ Desired Performance

🕒 Planning and Time Estimate

⚙️ Configuration Information

Note: The time in brackets is that required to reach the sensitivity. Operational requirements often mean that the actual observed time is longer, especially for mosaics. Please see the User Manual for more details.

Input Parameters

| | |
|--|---------------|
| Requested sensitivity | 18.97 mJy |
| Bandwidth used for sensitivity | 2.500 km/s |
| Representative frequency (sky, first source) | 230.139 GHz |
| Estimated Total time for Science Goal | 4.48 h |

Control and Performance (4)

| Cluster 1 | | | |
|--|---------------|----------------------|------------|
| Sources | | | |
| Source Name | RA | Dec | Velocity |
| M83 | 13:37:00.9192 | -29:51:56.739 | 519.1 km/s |
| Possible Configuration Combinations | | | |
| 12-m(1) | 12-m(2) | 7-m | TP |
| C-3 | None | Yes | Yes |
| ▼ Input Parameters | | | |
| Precipitable water vapour (all sources) | | 1.796mm (5th Octile) | |
| ▼ Time required for 12m (1) [C-3] | | | |
| Time on source per pointing (first source) | | 12.10 s [3.40 s] | |
| Total number of pointings (all sources) | | 140 | |
| Number of tunings | | 1 | |
| Total time on source | | 28.22 min [7.93 min] | |
| Total calibration time | | 16.37 min | |
| Other overheads | | 5.17 min | |
| Total time for 1 SB execution | | 49.76 min | |
| Number of SB executions | | 1 | |
| Total time to complete SB | | 49.76 min | |
| ▼ Calibration Breakdown per SB execution | | | |
| 2 x Pointing | | 4.00 min | |
| 1 x Amplitude/bandpass | | 5.00 min | |
| 4 x Phase | | 2.00 min | |
| 4 x Atmospheric | | 2.67 min | |
| Calibration overheads | | 2.70 min | |
| ▼ Additional Arrays | | | |
| ACA 7-m on-source time | | 1.15 h | |
| Total 7-m time | | 2.15 h | |
| TP on-source time | | 1.81 h | |
| Total TP time | | 3.65 h | |
| Total ACA time (max[t_7-m,t_TP]) | | 3.65 h | |
| Estimated total time for cluster 1 | | 4.48 h | |

Technical Justification

? Sensitivity

Requested RMS over 2.500 km/s is 18.97 mJy

For a peak flux density of 100.00 mJy , the S/N is 5.3

Achieved RMS over the total 5.625 GHz bandwidth is 185.75 uJy, 2.98 mK-4.90 mK

For a continuum flux density of 0.00 Jy, 0.00 mK-0.00 mK , the achieved S/N is 0.0

For a peak line flux of 100.00 mJy , the achieved S/N over 1/3 of the source line width (500.00 km/s / 3 = 166.67 km/s) is 81.2

Line width / bandwidth used for sensitivity (500.00 km/s / 2.50 km/s) = 200.00

Justify your requested RMS and resulting S/N for the spectral line and/or continuum observations.
For line observations also justify the bandwidth used for the sensitivity calculation.

Technical Justification cannot be blank.

? Imaging

Requested angular resolution 1.20 arcsec - 800.00 mas

Requested Largest Angular Scale 1.67 arcmin

Justify the chosen angular resolution and largest angular scale for the source(s) in this Science Goal

Technical Justification cannot be blank.

? Correlator configuration

Line width / representative spectral window resolution: 500.00 km/s / 735.29 m/s = 680.00

Representative spectral window width : 1221.24 km/s

Technical Justification

- Check S/N (line and continuum) is as you expect
 - Aim for >5 per-channel for good line imaging!
- Check bandwidth is reasonable
 - In general, this should be calculated over $\sim\frac{1}{3}$ the linewidth, so you can resolve the line
- Make sure angular resolution is good enough for your science
- Make sure LAS is large enough you won't resolve out flux
- Make sure your velocity resolution is enough to resolve your line
- Make sure your total bandwidth is wide enough for the whole line
 - Include a buffer for continuum subtraction and potential redshift errors

Time Summary

 Project Overview

 Time Summary

 Data Volumes & Data Rates

[v Expand all science goals](#) [^ Collapse all science goals](#)

| Science Goal Name | 12-m(1) | | 12-m(2) | | 12-m(1+2) | | ACA 7-m | | ACA TP | | Overall | |
|-----------------------|-----------|-----------|---------|------|-----------|-----------|---------|-----------|--------|--------|---------|--------|
| | Tot. | Cal. | Tot. | Cal. | Tot. | Cal. | Tot. | Cal. | Tot. | Cal. | Tot. | Cal. |
| v M83 | 49.76 min | 16.37 min | - | - | 49.76 min | 16.37 min | 2.15 h | 50.93 min | 3.65 h | 1.85 h | 4.48 h | 2.12 h |
| Cluster 1 | 49.76 min | 16.37 min | - | - | 49.76 min | 16.37 min | 2.15 h | 50.93 min | 3.65 h | 1.85 h | 4.48 h | 2.12 h |
| Overall | 49.76 min | 16.37 min | - | - | 49.76 min | 16.37 min | 2.15 h | 50.93 min | 3.65 h | 1.85 h | 4.48 h | 2.12 h |

Data Volumes

 Project Overview

 Time Summary

 Data Volumes & Data Rates

[▼ Expand all science goals](#) [^ Collapse all science goals](#)

| Science Goal Name | Data Volume | | | Avg. Data Rate | | |
|-----------------------|-------------|---------|---------|----------------|---------|---------|
| | 12-m (1+2) | ACA 7-m | ACA TP | 12-m (1+2) | ACA 7-m | ACA TP |
| ▼ M83 | 24.53 GB | 6.83 GB | 4.51 GB | - | - | - |
| Cluster 1 | 24.53 GB | 6.83 GB | 4.51 GB | 9.99 MB | 1.03 MB | 0.53 MB |
| Overall | 24.53 GB | 6.83 GB | 4.51 GB | | | |

Validation

Technical description cannot be blank.

Validation 10 errors 3 warnings

| Type | Actions | Message | Suggestion |
|-------|---------|--|---|
| Error | ⊕ | No Project Name specified | Select the Proposal tab and fill in the Project Name field |
| Error | ⊕ | Abstract appears to be empty | Select the Proposal tab and edit your abstract |
| Error | ⊕ | No scientific category defined | Select the Proposal tab and set a scientific category |
| Error | ⊕ | No document found - you must add a Science Case to your proposal | Select the Proposal tab and add your document |
| Error | ⊕ | Must select a minimum of 1 science keywords | Select the Proposal tab and then add some science keywords (minimum 1 keywords) |
| Error | ⊕ | No mentor has been defined | Please select a mentor (must be a registered ALMA user) |
| Error | ⊕ | Neither the reviewer or mentor have a PhD | Please select a reviewer or mentor with a PhD |

- Errors **must** be addressed, warnings are OK but you should check they're reasonable to ignore

Submission and PDF

- Hitting submit will validate project and then upload properly to be considered for the Cycle
 - Any validation errors will stop submission!
- You can resubmit as many times as you want
- Once submitted, export the PDF to see what the TAC will see
 - This will be an **anonymised** version of the proposal (i.e. basically everything apart from the investigator list)

Some final things to note throughout

- DPR is dual-blinded, so make sure your proposal is anonymous. The proposer guide has guidelines on this
- Check the archive before to ensure you aren't duplicating observations
 - There's a lot there already!
 - <https://almascience.eso.org/proposing/proposing/proposers-guide#duplicate-observations-and-resubmissions> for details on what counts
- Make sure your science case adheres to the rules
 - Too small font, margins etc. can lead to disqualification
- Start early!
 - Gives time for co-Is to provide comments, helpdesk to provide support, and the servers can often be slow right before the deadline with the volume of people submitting