The Web-Based OT

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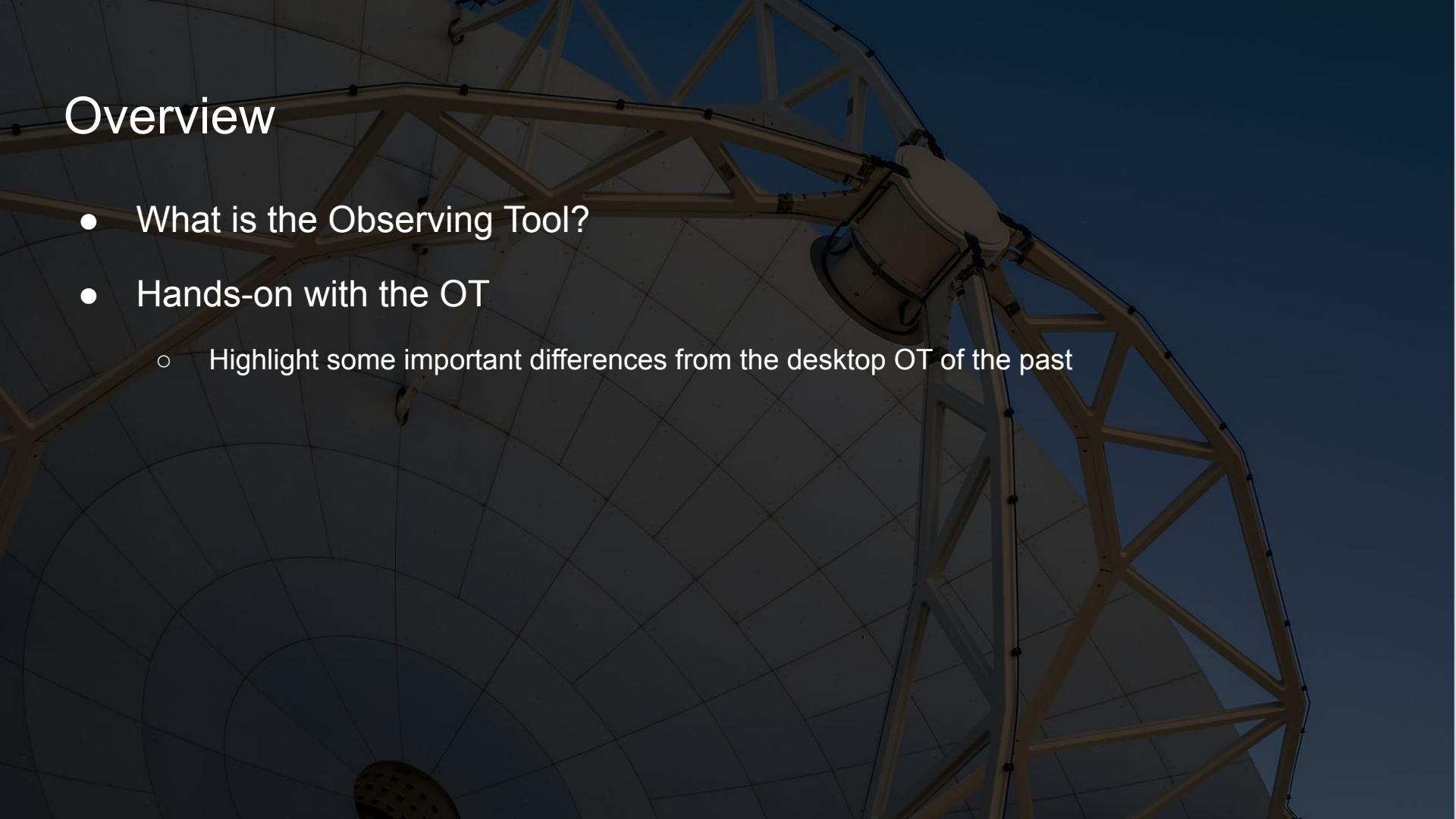
The University of Manchester



Overview

- 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?

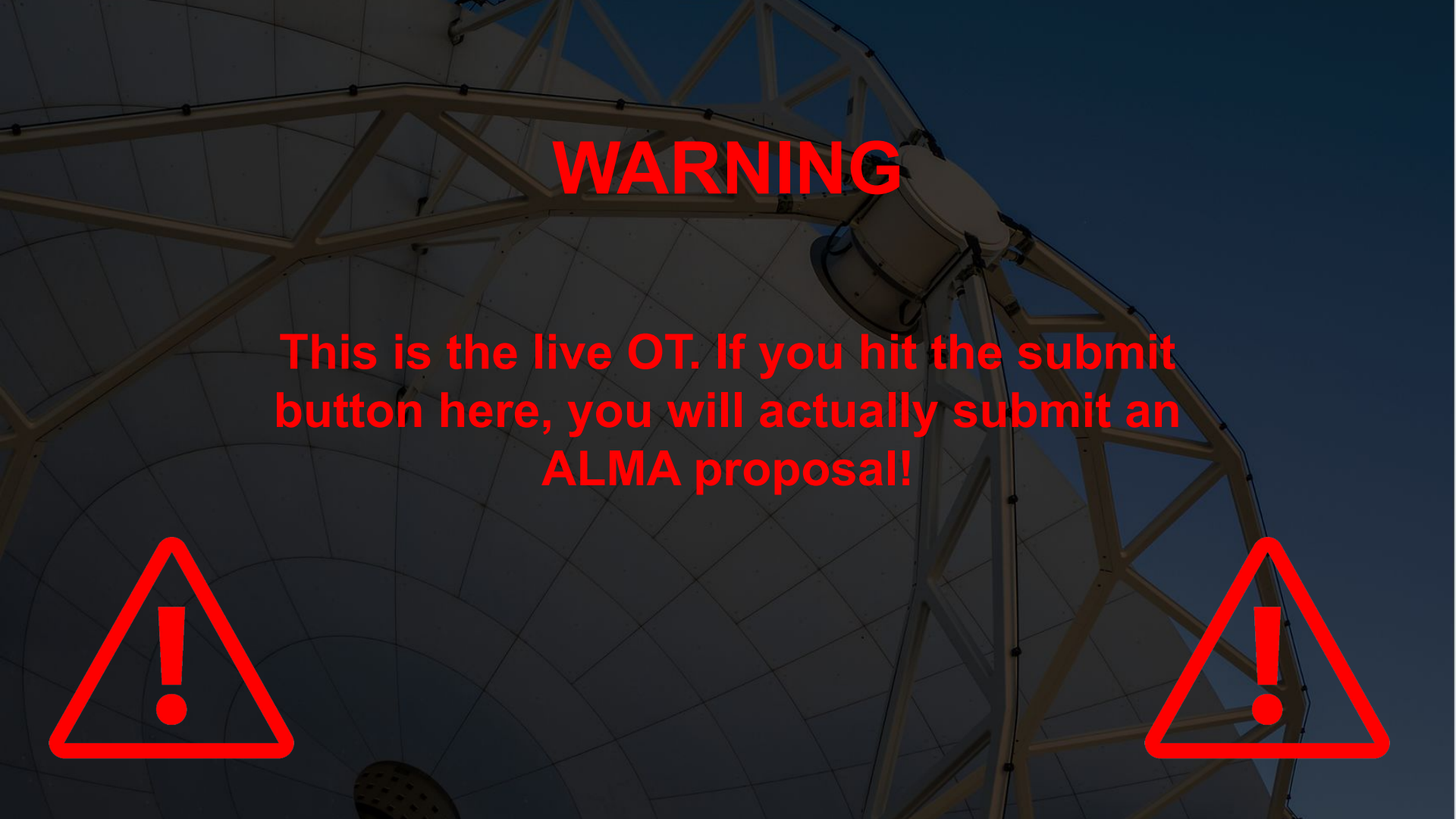
- We have transitioned from a desktop-based OT to a web-based OT
- Benefits include
  - Continuous updates, rather than having to check for potential patches
  - More responsive, particularly for target resolution and line selection
  - A much more modern UI, and general user experience improvements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

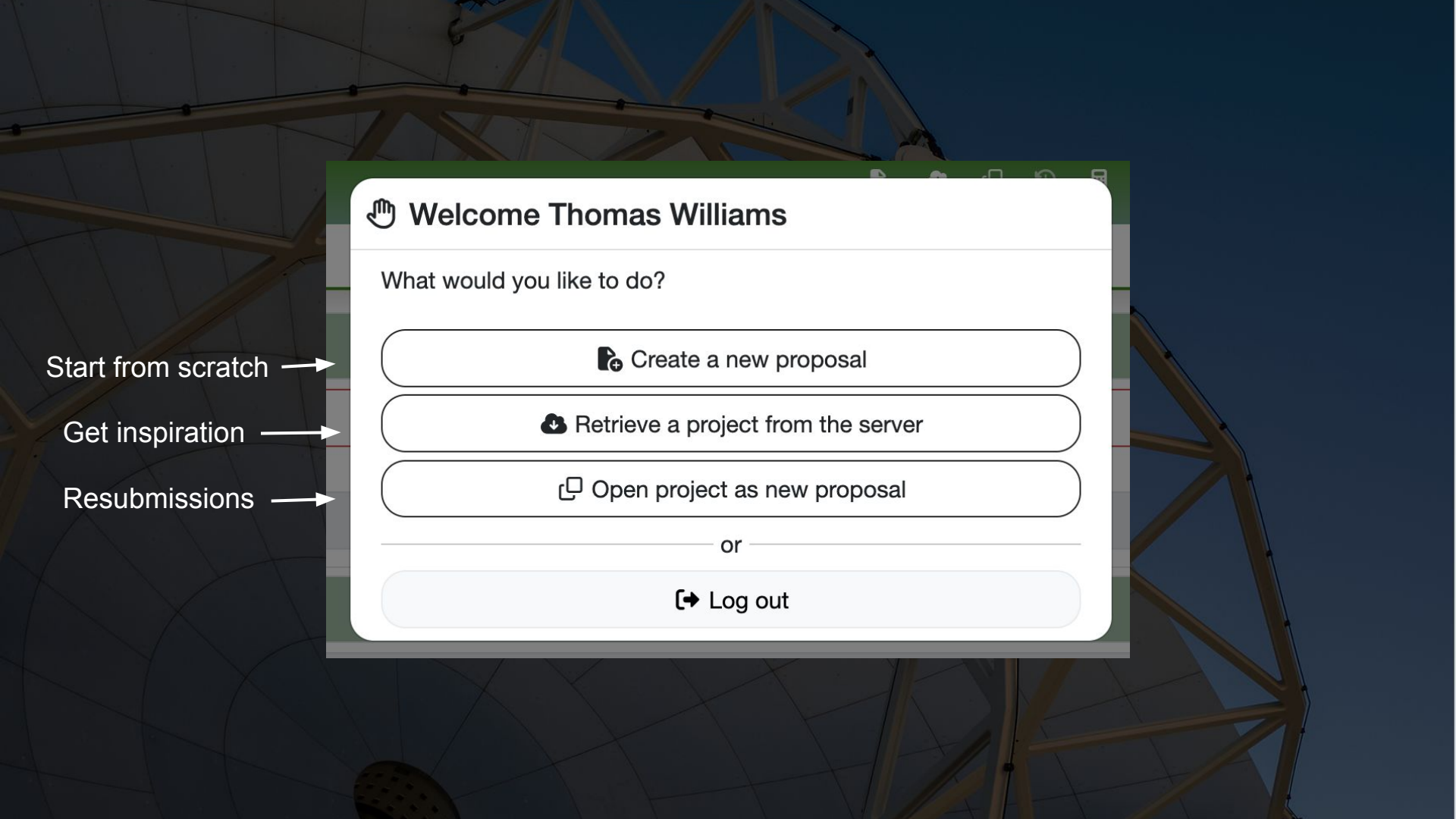
A note on AI

- 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

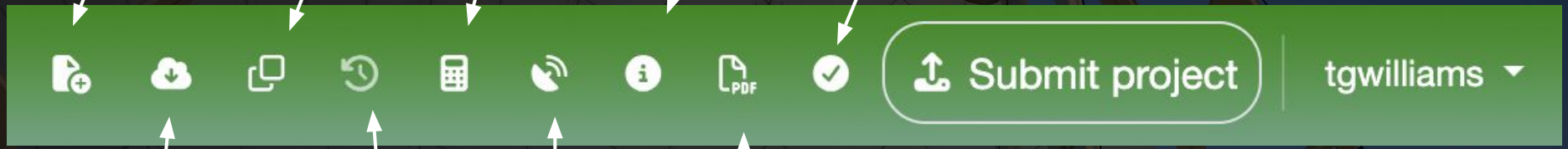
https://cycle-13.sps.alma.cl/ngot/


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

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

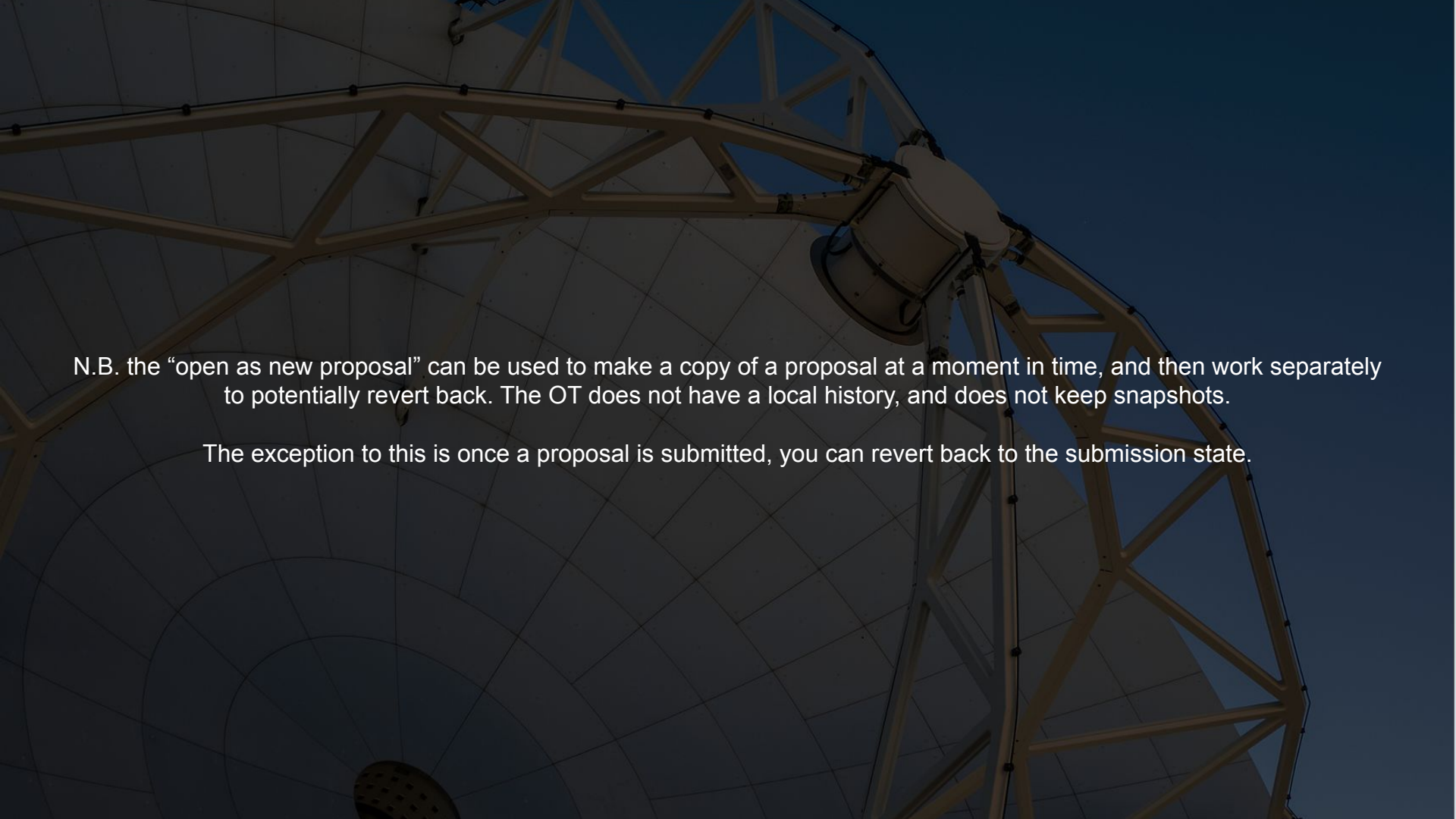
Validate

Open from server

Revert to submitted state

Show antenna configs

Generate PDF of whole proposal



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

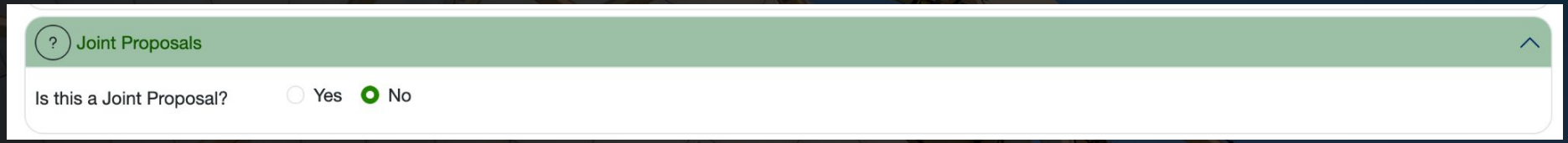
Proposal Type

- (•) 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.



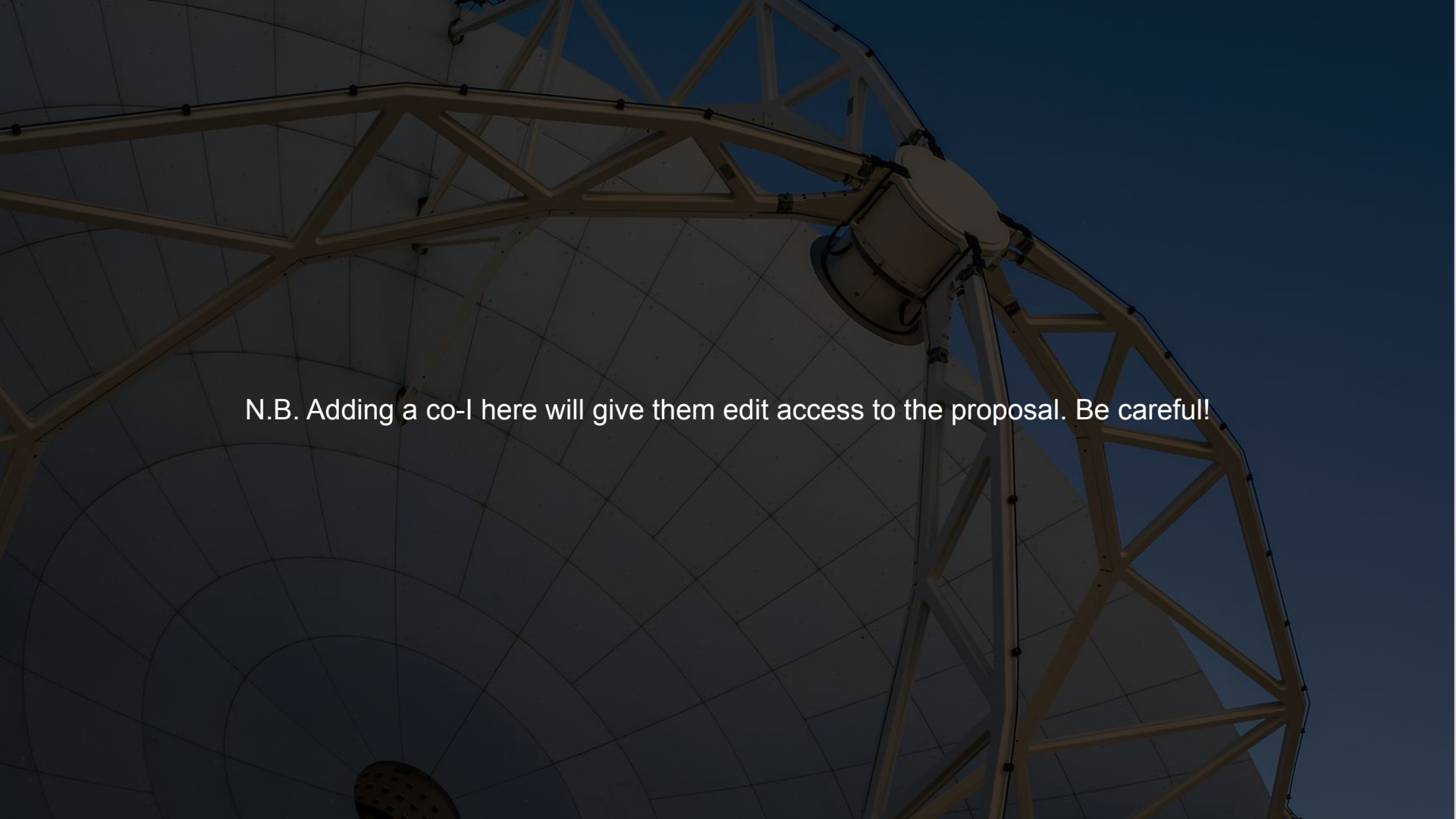
https://almascience.nrao.edu/proposing/proposers-guide#autotoc-item-autotoc-18

Investigators

Select PI | Add CoPI | Add CoI | Add from project | Select all collaborator(s) | Unselect collaborator(s) | Remove collaborator(s)

Reviewer	Type ↓	Full Name	Affiliation	ALMA ID	Executive
◉	PI	Thomas Williams	Jodrell Bank Centre for Astrophysics, Manchester, University of	tgwilliams	Europe

0 selected /1 collaborator(s) found


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.)

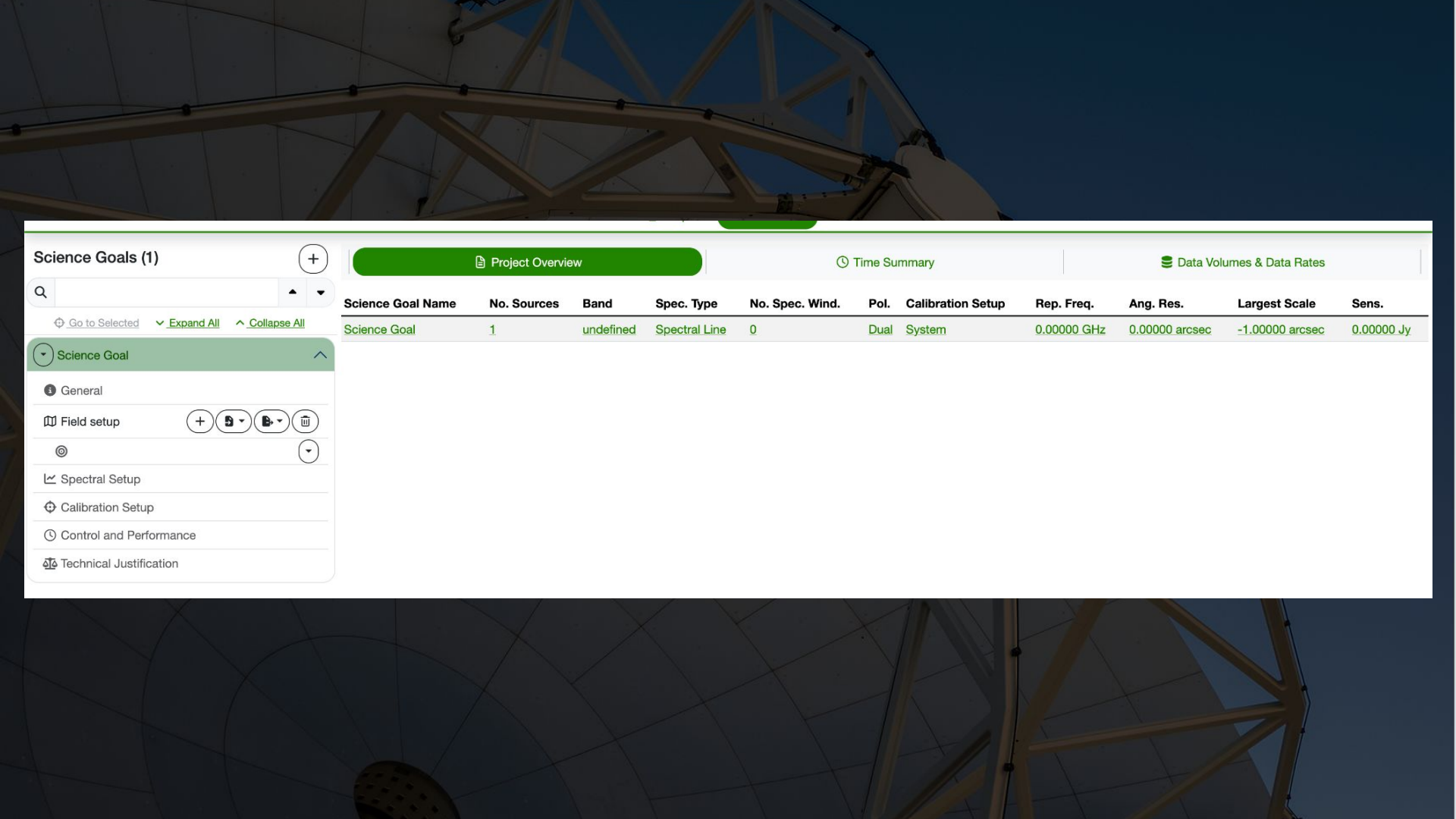
It is mandatory to attach a Science Case.

Attach | View | Remove

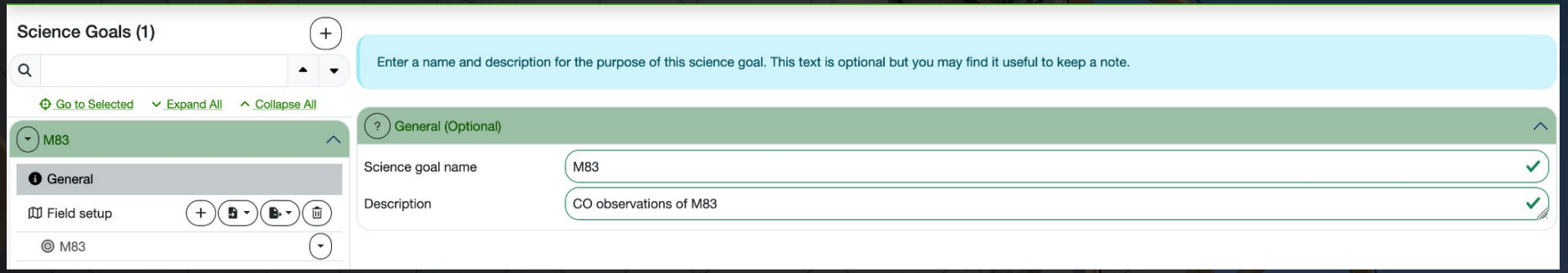
Duplicate Observations

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

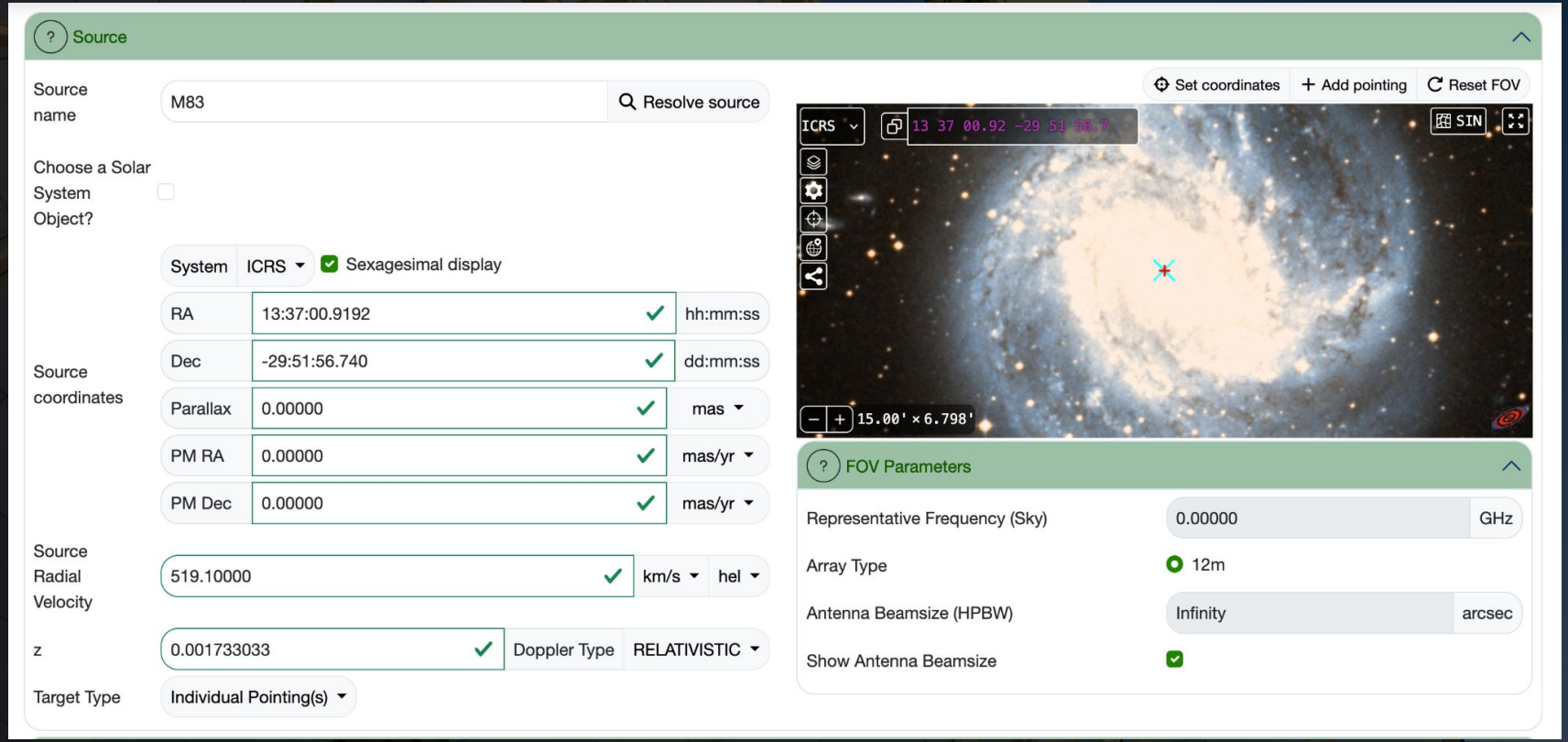
Information regarding the ALMA Duplication Policy and how to search archival data and accepted programs can be found at: http://almascience.org/proposing/duplications


Science Goals (1)
Go to Selected
Expand All
Collapse All
Science Goal
General
Field setup
Spectral Setup
Calibration Setup
Control and Performance
Technical Justification
Project Overview
Time Summary
Data Volumes & Data Rates
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

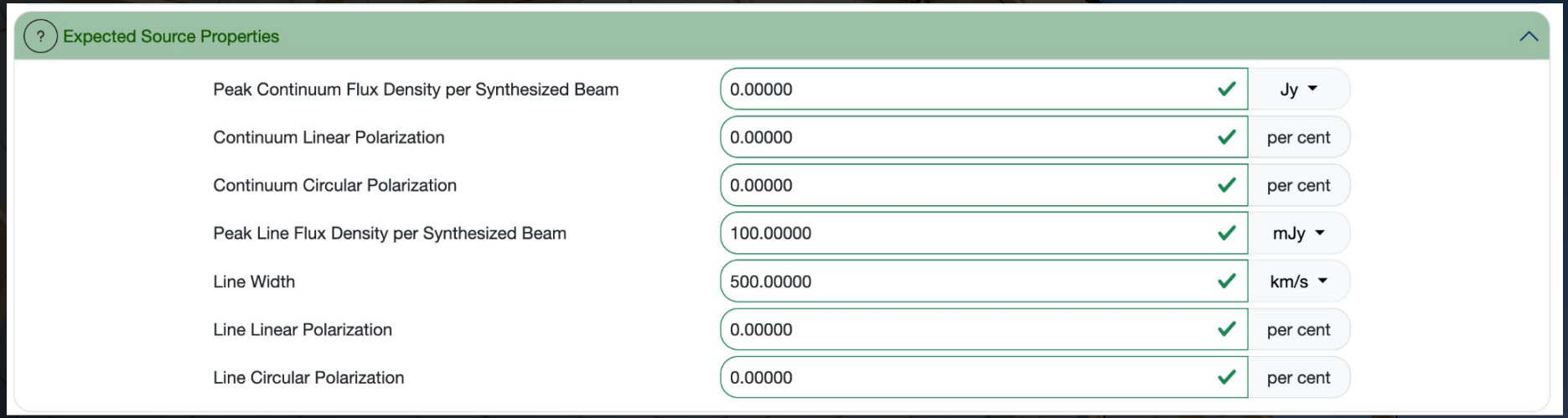
General


Science Goals (1)
Go to Selected
Expand All
Collapse All
M83
General
Field setup
M83
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.
General (Optional)
Science goal name
M83
Description
CO observations of M83

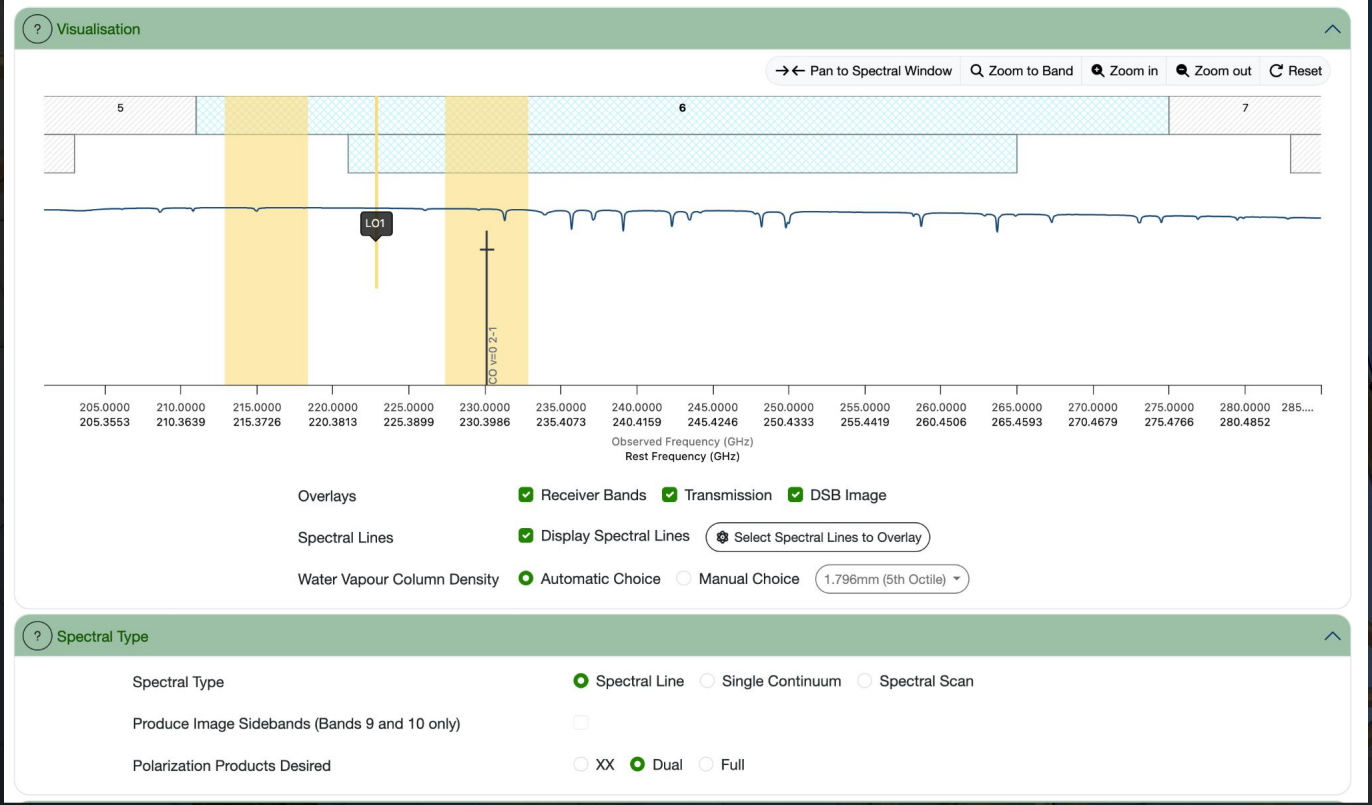
Field Setup (1)

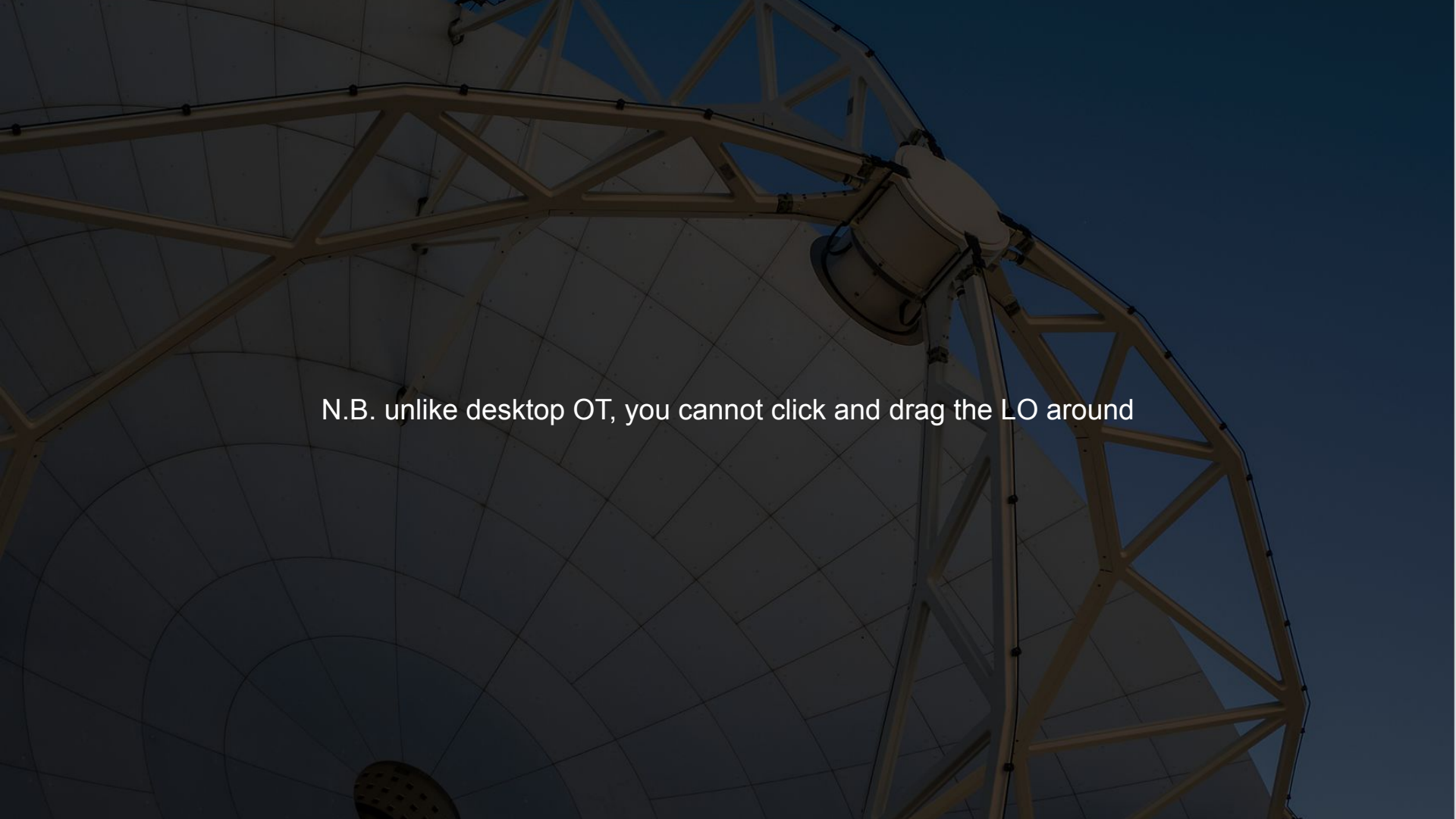


Field Setup (2)

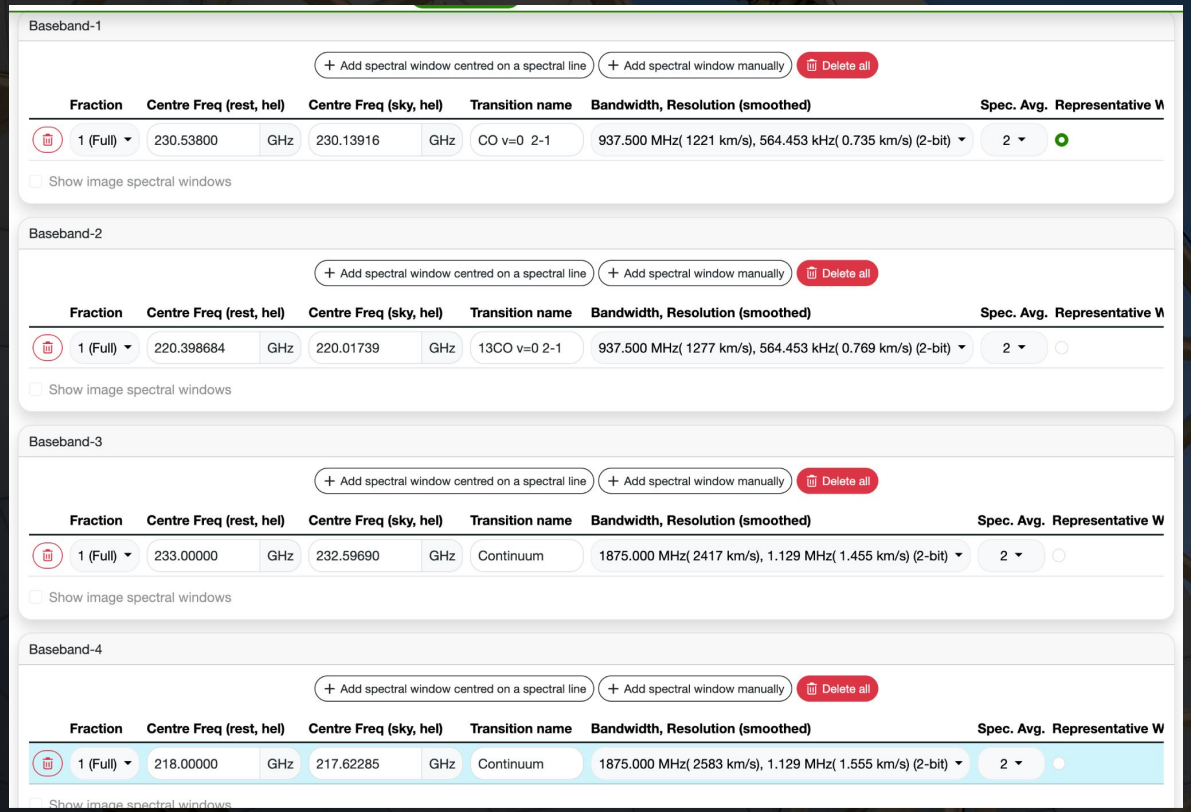


Spectral Setup (1)




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	

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	

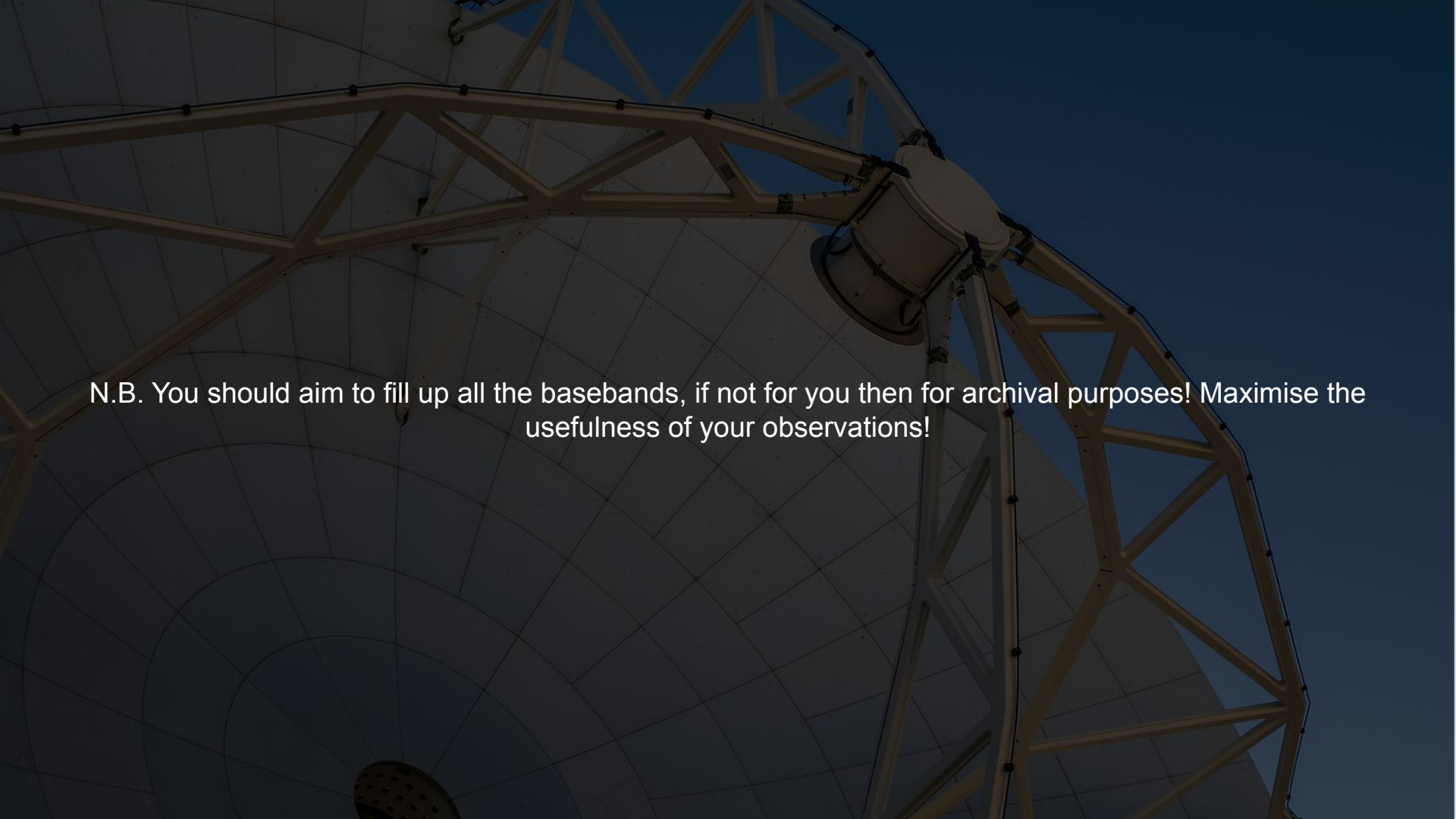
Show image spectral windows

Baseband-4

+ Add spectral window centred on a spectral line | + Add spectral window manually | Delete all

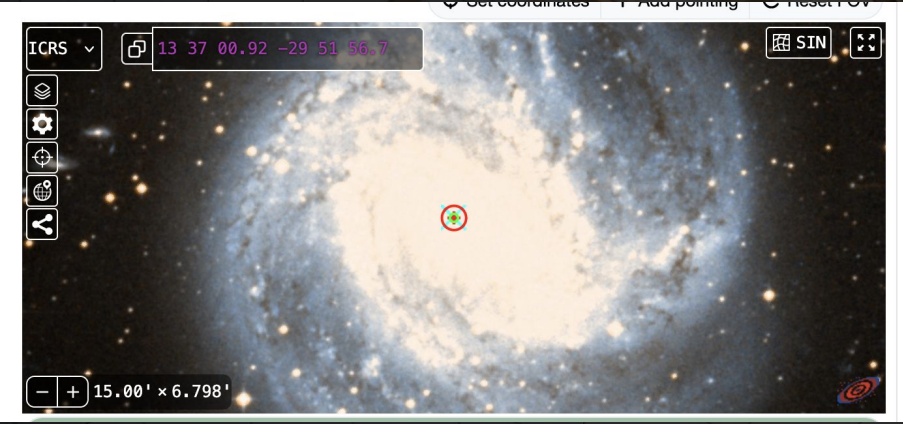
Fraction	Centre Freq (rest, hel)		Centre Freq (sky, hel)		Transition name	Bandwidth, Resolution (smoothed)	Spec. Avg.	Representative W
1 (Full)	218.00000	GHz	217.62285	GHz	Continuum	1875.000 MHz(2583 km/s), 1.129 MHz(1.555 km/s) (2-bit)	2	

Show image spectral windows



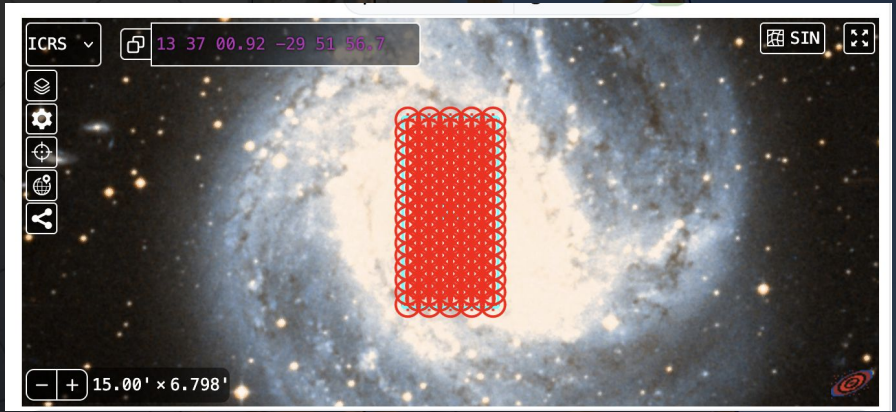
N.B. You should aim to fill up all the basebands, if not for you then for archival purposes! Maximise the usefulness of your observations!

Field Setup (3)

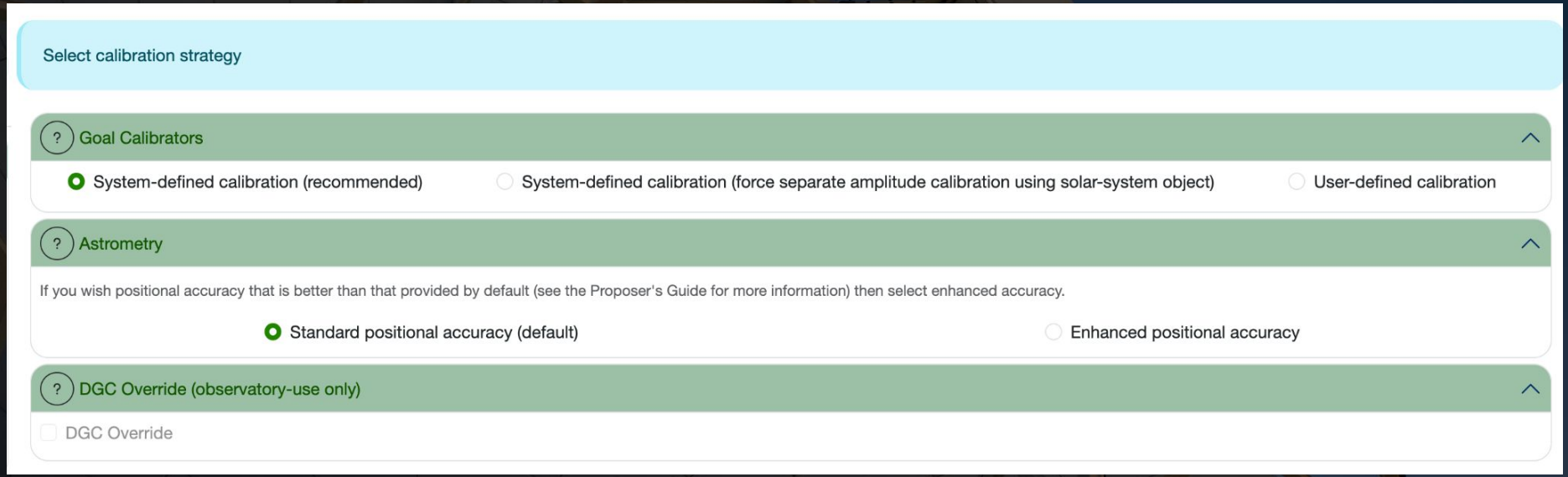


Single pointing

Mosaic



Calibration Setup



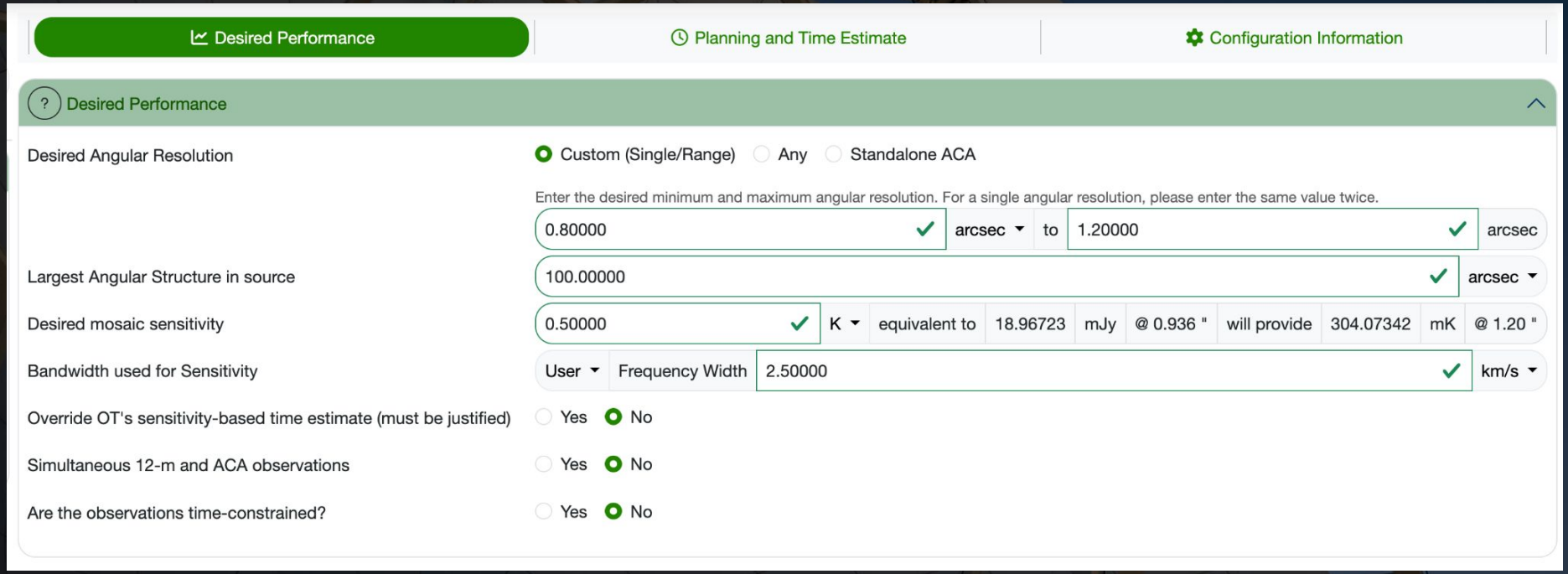
Control and Performance (1)

Desired Performance | Planning and Time Estimate | Configuration Information

Antenna Beamsize (1.13 * λ/D)	12m	25.30186 arcsec	7m	43.37462 arcsec	
Number of Antennas	12m	43	7m	10	TP 3

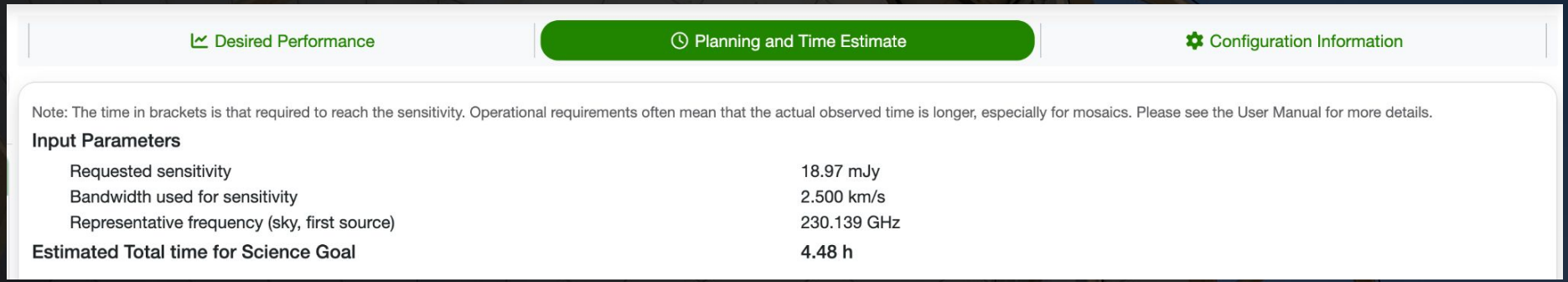
	ACA 7m Configuration	Most compact 12m configuration	Most extended 12m configuration
Longest baseline	49 m	160.7 m	16196.6 m
Synthesized beamsize	5.43344 arcsec	1.44398 arcsec	0.02216 arcsec
Shortest baseline	9 m	15.1 m	256.1 m
Maximum recoverable scale	29.08097 arcsec	12.46555 arcsec	0.21621 arcsec

Control and Performance (2)



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

Control and Performance (3)



Control and Performance (4)

Cluster 1

Sources

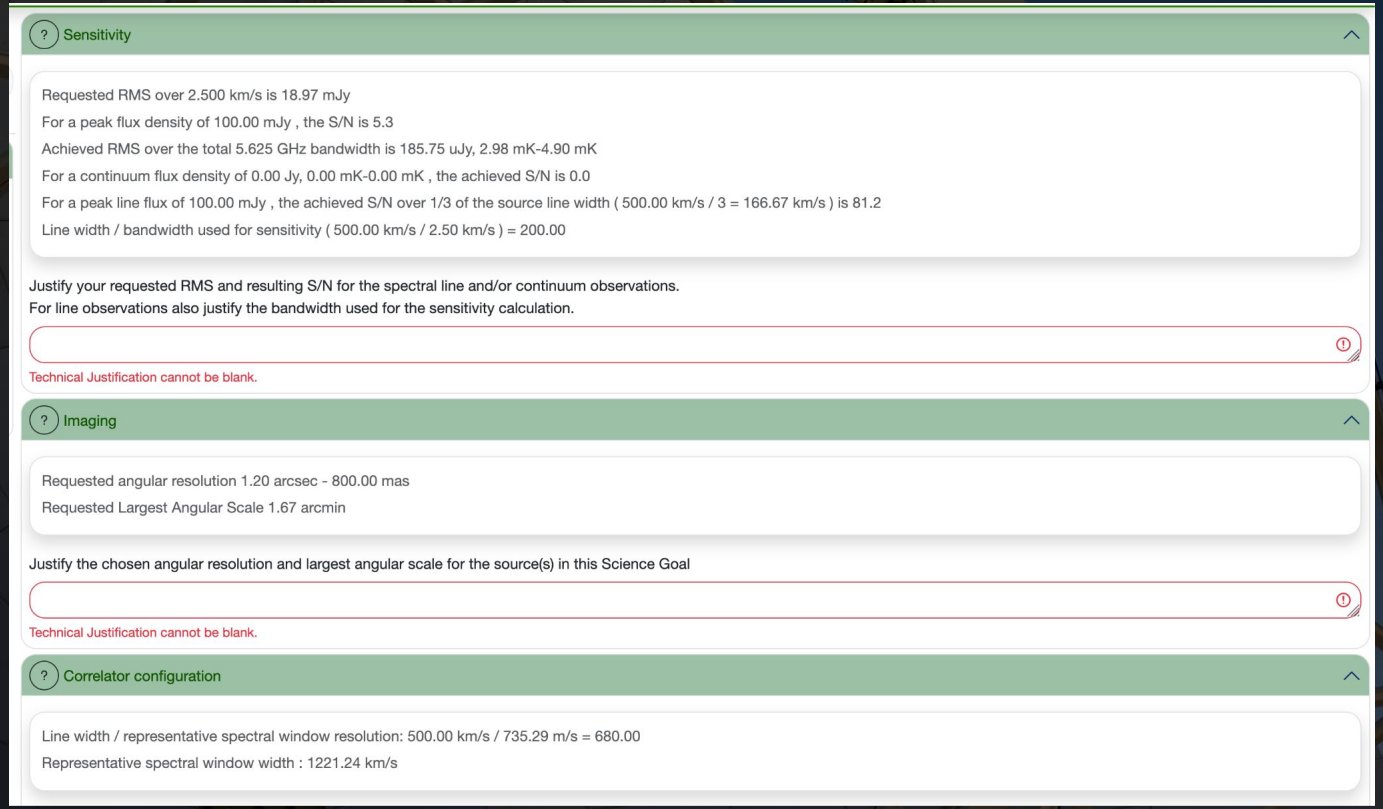
Source Name	RA	Dec	Velocity
M83	13:37:00.9192	-29:51:56.739	519.1 km/s

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

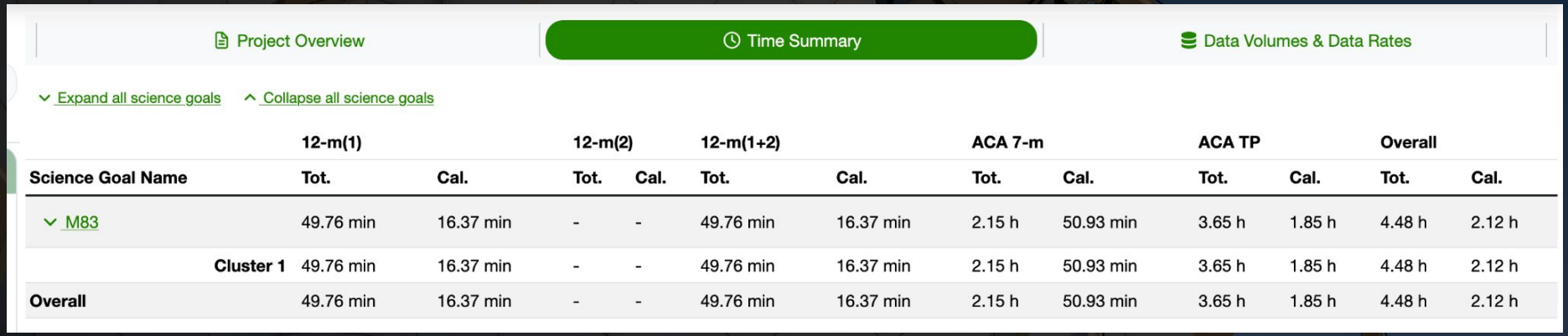
Technical Justification



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 ~⅓ 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



	12-m(1)		12-m(2)		12-m(1+2)		ACA 7-m		ACA TP		Overall	
Science Goal Name	**Tot.**	**Cal.**	**Tot.**	**Cal.**	**Tot.**	**Cal.**	**Tot.**	**Cal.**	**Tot.**	**Cal.**	**Tot.**	**Cal.**
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

	Data Volume			Avg. Data Rate		
Science Goal Name	**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

- 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