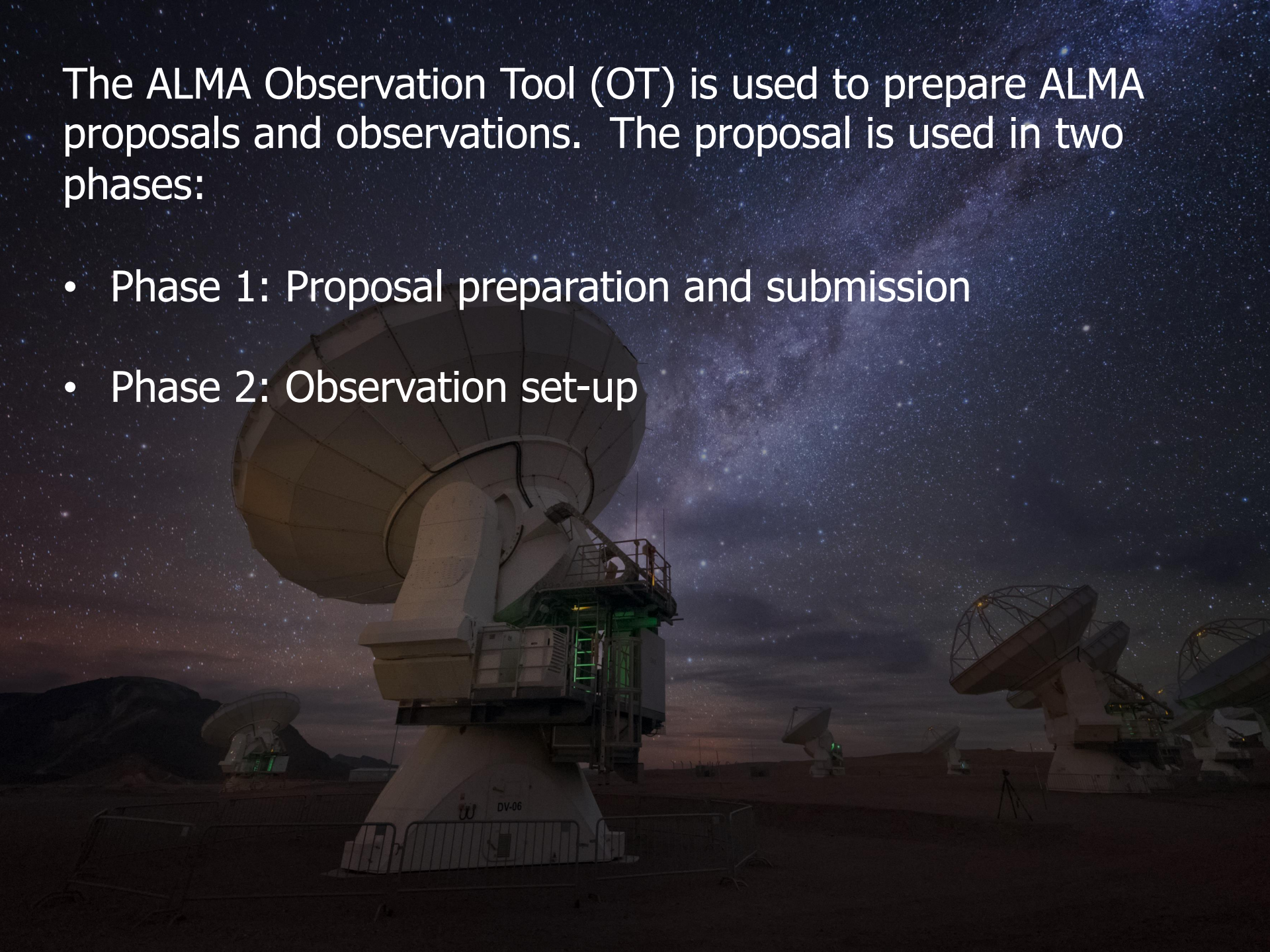
Observation Preparation and Tracking



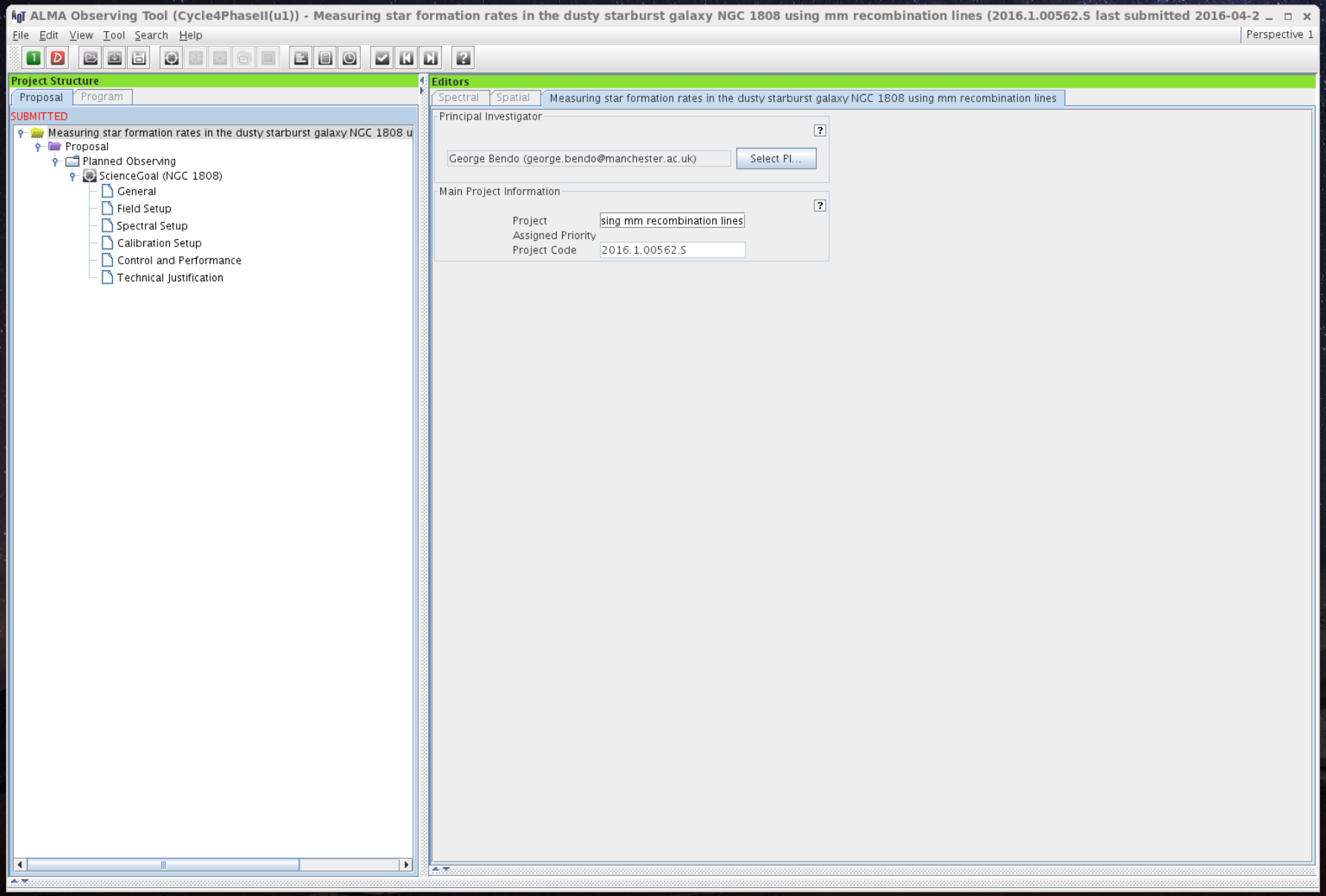
The ALMA Observation Tool (OT) is used to prepare ALMA proposals and observations. The proposal is used in two phases:

- Phase 1: Proposal preparation and submission
- Phase 2: Observation set-up

Phase 1: Proposal Preapration and Submission

For proposal preparation, the PI needs to prepare the following information:

- Basic proposal information
- Scientific justification
- Field set-up
- Spectral set-up
- Control and performance (sensitivity and angular scale specifications)
- Technical justification


ALMA Observing Tool (Cycle4PhaseII(u1)) - Measuring star formation rates in the dusty starburst galaxy NGC 1808 using mm recombination lines (2016.1.00562.S last submitted 2016-04-2
File Edit View Tool Search Help
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Measuring star formation rates in the dusty starburst galaxy NGC 1808 u
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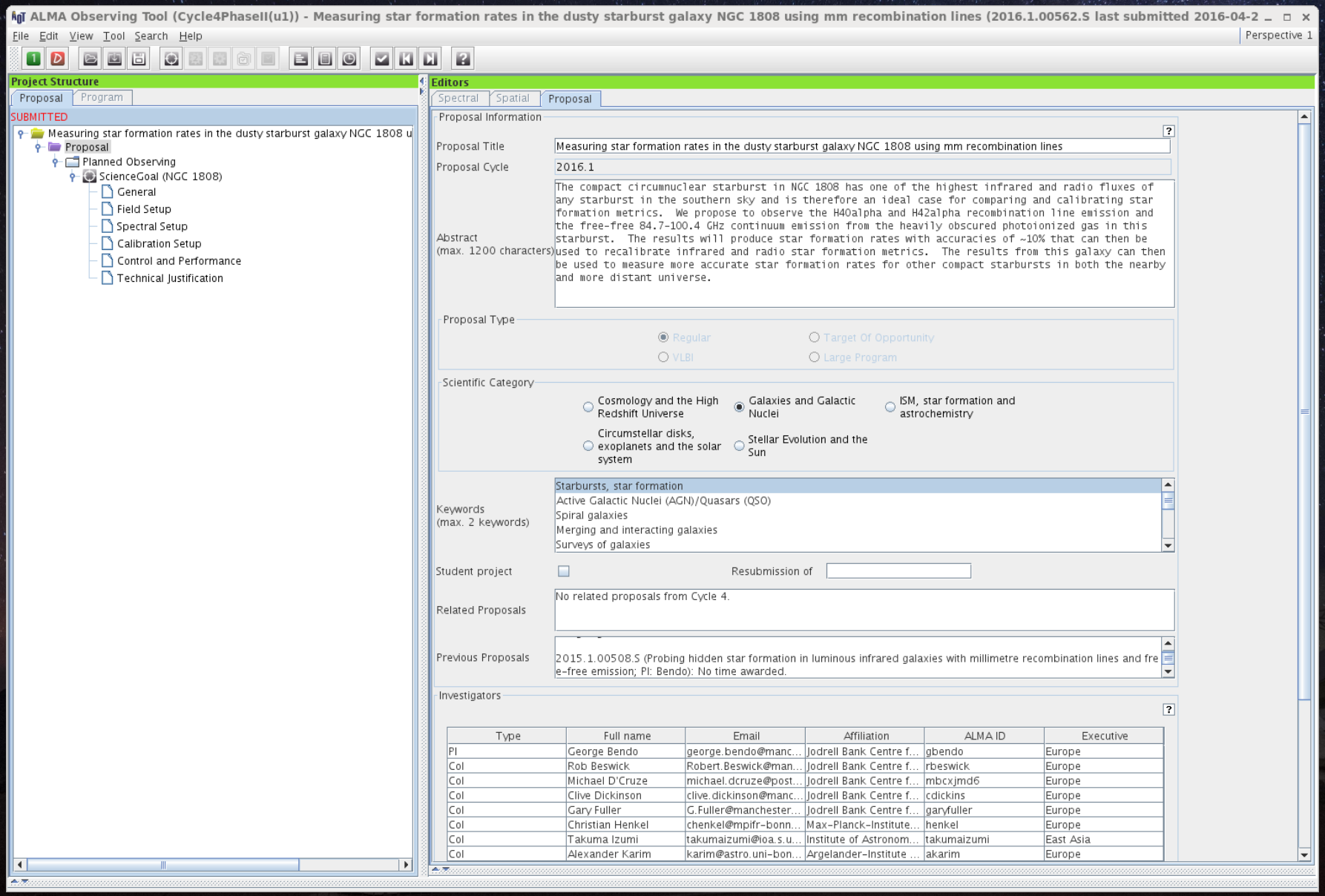
Spectral Setup
Calibration Setup
Control and Performance
Technical Justification
Editors
Spectral Spatial Measuring star formation rates in the dusty starburst galaxy NGC 1808 using mm recombination lines
Principal Investigator
George Bendo (george.bendo@manchester.ac.uk)
Select PI...
Main Project Information
Project
sing mm recombination lines
Assigned Priority
Project Code
2016.1.00562.S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Editors
Spectral Spatial Proposal
Proposal Information
Proposal Title
Measuring star formation rates in the dusty starburst galaxy NGC 1808 using mm recombination lines
Proposal Cycle
2016.1
Abstract
(max. 1200 characters)
The compact circumnuclear starburst in NGC 1808 has one of the highest infrared and radio fluxes of any starburst in the southern sky and is therefore an ideal case for comparing and calibrating star formation metrics. We propose to observe the H40alpha and H42alpha recombination line emission and the free-free 84.7-100.4 GHz continuum emission from the heavily obscured photoionized gas in this starburst. The results will produce star formation rates with accuracies of ~10% that can then be used to recalibrate infrared and radio star formation metrics. The results from this galaxy can then be used to measure more accurate star formation rates for other compact starbursts in both the nearby and more distant universe.
Proposal Type
Regular
Target Of Opportunity
VLBI
Large Program
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
Keywords
(max. 2 keywords)
Starbursts, star formation
Active Galactic Nuclei (AGN)/Quasars (QSO)
Spiral galaxies
Merging and interacting galaxies
Surveys of galaxies
Student project
Resubmission of
Related Proposals
No related proposals from Cycle 4.
Previous Proposals
2015.1.00508.S (Probing hidden star formation in luminous infrared galaxies with millimetre recombination lines and fre
e-free emission; PI: Bendo): No time awarded.
Investigators
Type Full name Email Affiliation ALMA ID Executive
PI George Bendo george.bendo@manc... Jodrell Bank Centre f... gbendo Europe
CoI Rob Beswick Robert.Beswick@man... Jodrell Bank Centre f... rbeswick Europe
CoI Michael D'Cruze michael.dcruze@post... Jodrell Bank Centre f... mbcxjmd6 Europe
CoI Clive Dickinson clive.dickinson@manc... Jodrell Bank Centre f... cdickins Europe
CoI Gary Fuller G.Fuller@manchester... Jodrell Bank Centre f... garyfuller Europe
CoI Christian Henkel chenkel@mpifr-bonn... Max-Planck-Institute... henkel Europe
CoI Takuma Izumi takumaizumi@ioa.s.u... Institute of Astronom... takumaizumi East Asia
CoI Alexander Karim karim@astro.uni-bon... Argelander-Institute ... akarim Europe

Measuring star formation rates in the dusty starburst galaxy NGC 1808 using mm recombination lines

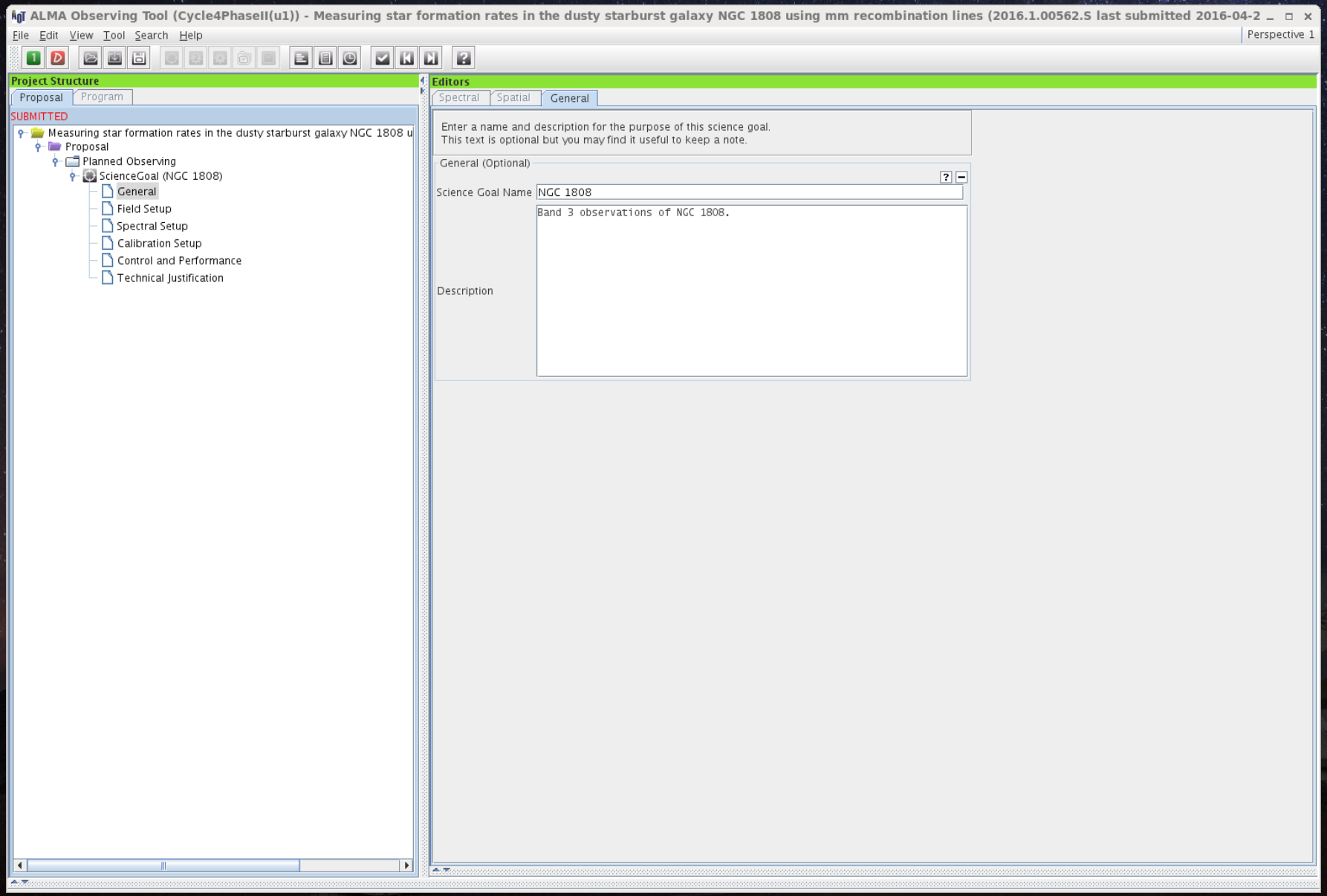
PI: G. J. Bendo

1 Scientific rationale:

Star formation is one of the key transformational processes in galaxies and is therefore fundamental to understanding the evolution of the Universe. To accurately describe this process, it is vital to properly measure star formation rates (SFRs). Most extragalactic star formation in the local Universe takes place in dust-rich starbursts in the centres of galaxies where ultraviolet, optical, and near-infrared emission is heavily obscured, so it is necessary to use infrared and radio data to study star formation in these galaxies. However, the conversion of the emission in these wavebands to SFRs is somewhat unreliable. The conversion of infrared dust emission to SFR relies upon assumptions regarding the stellar populations, the absorption of starlight by dust, and the spectral energy distribution (SED) of the dust emission (e.g. Rieke et al. 2009), while the conversion of radio emission to SFR relies significantly upon the infrared-radio relation (e.g. Murphy et al. 2011).

ALMA has the capability for an unprecedented study of star formation using tracers found at mm and submm wavelengths. The mm and submm bands contain multiple hydrogen recombination lines from photoionized gas near young stars (e.g. Scoville & Murchikova 2013). These lines are affected neither by dust obscuration like their optical and near-infrared counterparts nor by stimulated emission and gas opacity effects like their radio counterparts (Gordon & Walmsley 1990). Radio and mm recombination line emission is intrinsically weak because it is produced by transitions between higher energy levels (n>20), so the emission has previously been detected in only a handful of galaxies at low sensitivity levels. However, ALMA has the capability of detecting and measuring the emission more effectively than any other telescope in existence (e.g. Scoville & Murchikova 2013). Additionally, the continuum emission at <100 GHz is primarily free-free emission originating from the same photoionized gas as the recombination lines (e.g. Murphy et al. 2011). SFRs from the free-free emission by itself are affected by uncertainties related to electron temperatures (T_e) and the contribution of dust and synchrotron emission to the continuum, but when coupled with recombination line emission measurements, it can be used to constrain T_e and provide more precise SFRs.

ALMA observations of recombination line emission from NGC 253 (Bendo et al. 2015) and NGC 4945 (Bendo et al. 2016) have already revealed potential problems with infrared and radio star formation tracers. In both galaxies, the SFRs from free-free and mm recombination line emission are 2-3× lower than the values from lower frequency radio continuum emission, possibly because of issues with calibrating the lower frequency emission (a blend of free-free and synchrotron emission) as a star formation tracer. Additionally, the SFR from the mid-infrared dust emission from the centre of NGC 4945 was 10× lower than the SFRs from ALMA data, although the SFRs from ALMA data and the total infrared dust emission were similar. This was probably because the high dust masses attenuate the mid-infrared flux, suppressing it relative to the bolometric luminosity. As infrared and radio star formation tracers are heavily relied upon in extragalactic research, it is important to expand this work with ALMA to understand whether the results from NGC 253 and 4945 apply more broadly to dusty starbursts in general and whether the conversions of infrared or radio emission to SFR needs to be modified.


ALMA Observing Tool (Cycle4PhaseII(u1)) - Measuring star formation rates in the dusty starburst galaxy NGC 1808 using mm recombination lines (2016.1.00562.S last submitted 2016-04-2
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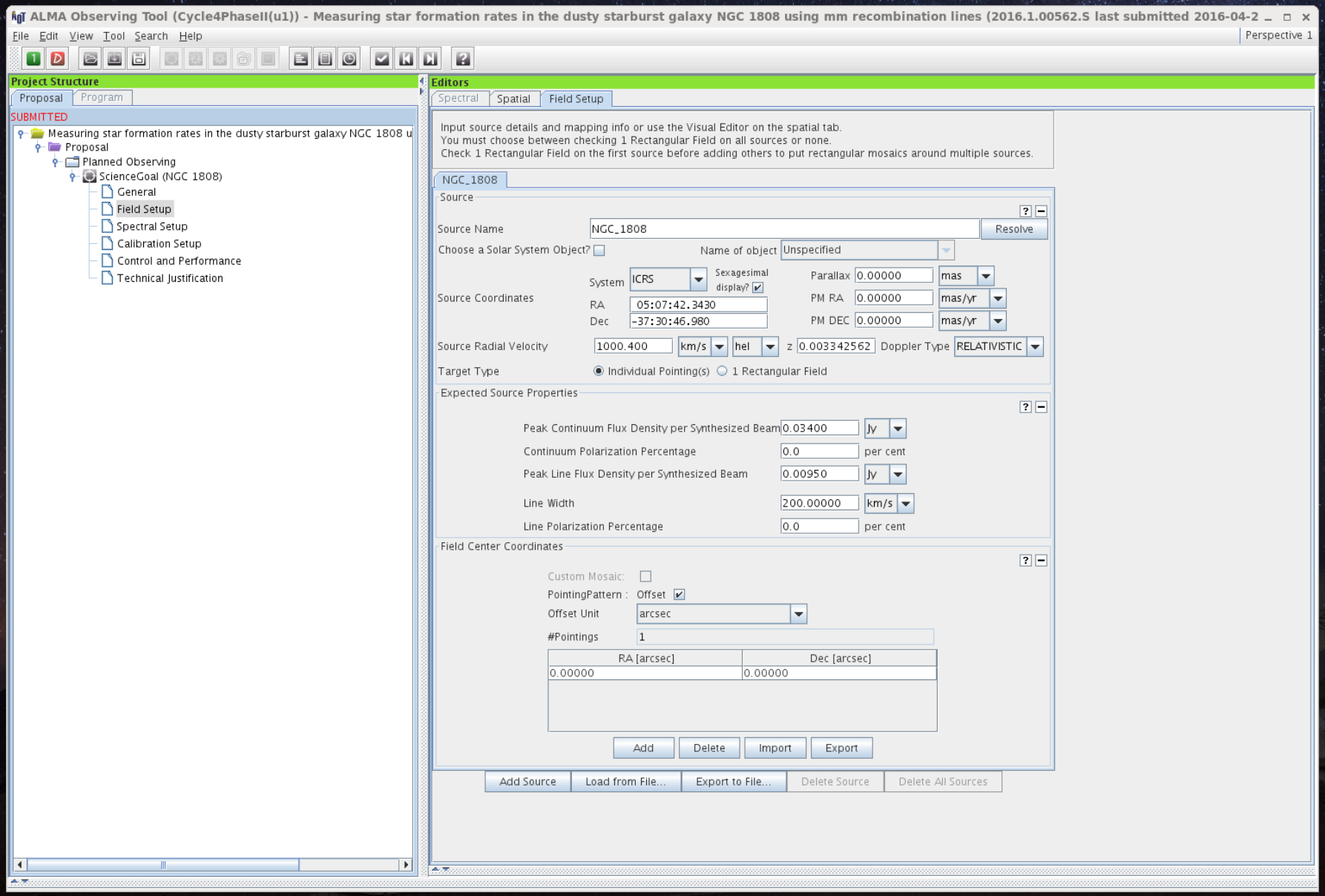
Spectral Spatial General
Enter a name and description for the purpose of this science goal.
This text is optional but you may find it useful to keep a note.
General (Optional)
Science Goal Name
NGC 1808
Description
Band 3 observations of NGC 1808.


ALMA Observing Tool (Cycle4PhaseII(u1)) - Measuring star formation rates in the dusty starburst galaxy NGC 1808 using mm recombination lines (2016.1.00562.S last submitted 2016-04-2
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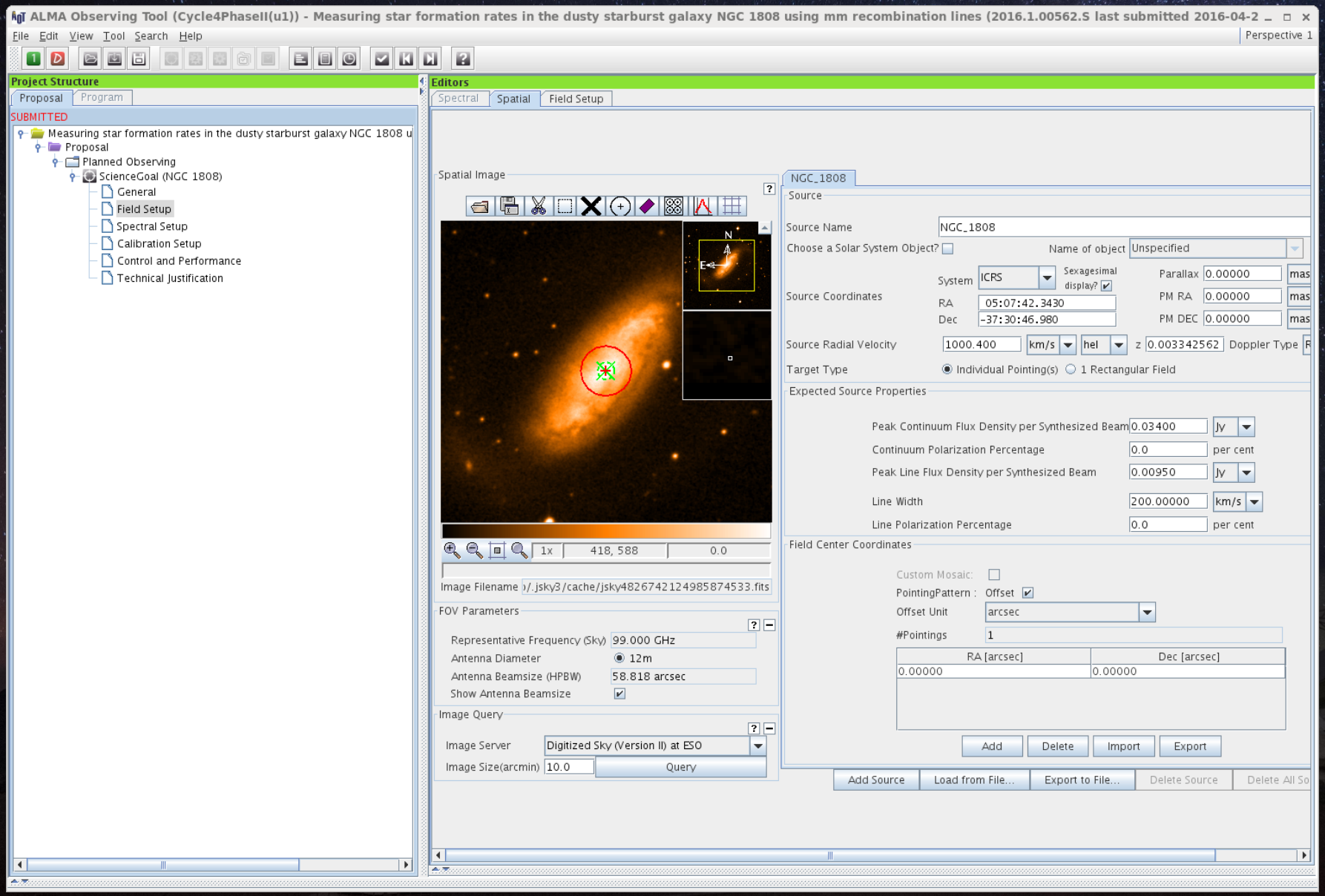
Spectral Spatial Field Setup
Input source details and mapping info or use the Visual Editor on the spatial tab.
You must choose between checking 1 Rectangular Field on all sources or none.
Check 1 Rectangular Field on the first source before adding others to put rectangular mosaics around multiple sources.
NGC_1808
Source
Source Name
NGC_1808
Resolve
Choose a Solar System Object?
Name of object
Unspecified
Source Coordinates
System
ICRS
Sexagesimal display?
RA
05:07:42.3430
Dec
-37:30:46.980
Parallax
0.00000
mas
PM RA
0.00000
mas/yr
PM DEC
0.00000
mas/yr
Source Radial Velocity
1000.400
km/s
hel
z
0.003342562
Doppler Type
RELATIVISTIC
Target Type
Individual Pointing(s)
1 Rectangular Field
Expected Source Properties
Peak Continuum Flux Density per Synthesized Beam
0.03400
Jy
Continuum Polarization Percentage
0.0
per cent
Peak Line Flux Density per Synthesized Beam
0.00950
Jy
Line Width
200.00000
km/s
Line Polarization Percentage
0.0
per cent
Field Center Coordinates
Custom Mosaic:
PointingPattern :
Offset
Offset Unit
arcsec
#Pointings
1
RA [arcsec]
Dec [arcsec]
0.00000
0.00000
Add
Delete
Import
Export
Add Source
Load from File...
Export to File...
Delete Source
Delete All Sources


ALMA Observing Tool (Cycle4PhaseII(u1)) - Measuring star formation rates in the dusty starburst galaxy NGC 1808 using mm recombination lines (2016.1.00562.S last submitted 2016-04-2
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Spatial Image
N
E
1x 418, 588 0.0
Image Filename)/.jsky3/cache/jsky4826742124985874533.fits
FOV Parameters
Representative Frequency (Sky) 99.000 GHz
Antenna Diameter 12m
Antenna Beamsize (HPBW) 58.818 arcsec
Show Antenna Beamsize
Image Query
Image Server Digitized Sky (Version II) at ESO
Image Size(arcmin) 10.0 Query
NGC_1808
Source
Source Name NGC_1808
Choose a Solar System Object?
Name of object Unspecified
Source Coordinates
System ICRS
Sexagesimal display?
RA 05:07:42.3430
Dec -37:30:46.980
Parallax 0.00000 mas
PM RA 0.00000 mas
PM DEC 0.00000 mas
Source Radial Velocity 1000.400 km/s hel z 0.003342562 Doppler Type R
Target Type Individual Pointing(s) 1 Rectangular Field
Expected Source Properties
Peak Continuum Flux Density per Synthesized Beam 0.03400 Jy
Continuum Polarization Percentage 0.0 per cent
Peak Line Flux Density per Synthesized Beam 0.00950 Jy
Line Width 200.00000 km/s
Line Polarization Percentage 0.0 per cent
Field Center Coordinates
Custom Mosaic:
PointingPattern : Offset
Offset Unit arcsec
#Pointings 1
RA [arcsec] Dec [arcsec]
0.00000 0.00000
Add Delete Import Export
Add Source Load from File... Export to File... Delete Source Delete All So

ALMA Observing Tool (Cycle4PhaseII(u1)) - Measuring star formation rates in the dusty starburst galaxy NGC 1808 using mm recombination lines (2016.1.00562.S last submitted 2016-04-2

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        - Technical Justification

Editors

Spectral | Spatial | Spectral Setup

In the table below, it is possible to define up to 16 spectral windows, 4 per baseband as long as the total Fraction per baseband is no more than 1.
Each baseband is 2GHz wide and can be separately configured i.e. each spectral window can have a different bandwidth and resolution.
Note that for bands 3, 4, 6, 7 and 8, it is not possible to put 3 basebands in one sideband and the fourth one in the other.

Spectral Type

Spectral Type: (•) Spectral Line ( ) Single Continuum ( ) Spectral Scan

Polarization products desired: ( ) XX (•) DUAL ( ) FULL

Spectral Setup Errors

Spectral Line

Baseband-1

Fractio	Centre Freq (rest,hel)	Centre Freq (sky,hel)	Transition	Bandwidth, Resolution (smoothed)	Spec Avg.	Representativ Window
1(Full)	85.63529 GHz	85.35000 GHz	H (42) α	1875.000 MHz(6586 km/s), 1.129 MHz(3.965 km/s)	2	( )

Select Lines to Observe in Baseband-1... | Add | Delete

Baseband-2

1(Full)	87.51655 GHz	87.22500 GHz	Continuum	1875.000 MHz(6444 km/s), 1.129 MHz(3.880 km/s)	2	( )

Select Lines to Observe in Baseband-2... | Add | Delete

Baseband-3

1(Full)	99.48141 GHz	99.15000 GHz	H (40) α	1875.000 MHz(5669 km/s), 1.129 MHz(3.413 km/s)	2	(•)

Select Lines to Observe in Baseband-3... | Add | Delete

Baseband-4

1(Full)	97.60015 GHz	97.27500 GHz	Continuum	1875.000 MHz(5779 km/s), 1.129 MHz(3.479 km/s)	2	( )

Select Lines to Observe in Baseband-4... | Add | Delete

Representative Frequency

ALMA Observing Tool (Cycle4PhaseII(u1)) - Measuring star formation rates in the dusty starburst galaxy NGC 1808 using mm recombination lines (2016.1.00562.S last submitted 2016-04-2

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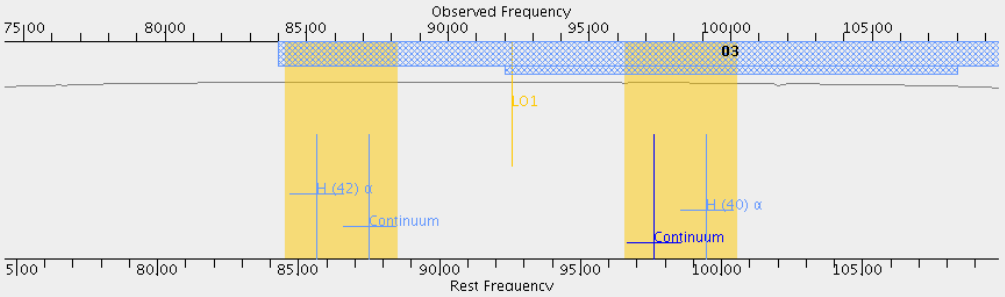
Editors

Spectral | Spatial | Spectral Setup

Visualisation

In the table below, it is possible to define up to 16 spectral windows, 4 per baseband as long as the total Fraction per baseband is no more than 1.
Each baseband is 2GHz wide and can be separately configured i.e. each spectral window can have a different bandwidth and resolution.
Note that for bands 3, 4, 6, 7 and 8, it is not possible to put 3 basebands in one sideband and the fourth one in the other.

Left/right click to zoom in/out, grab sliding bar to pan
Note: Moving LO1 here is for experimentation only – actual setup determined by the windows



Overlays: ☑ Receiver Bands ☑ Transmission ☐ Overlay Lines ☑ DSB Image | Select Lines to Overlay

Water Vapour Column Density: ◉ Automatic Choice ○ Manual Choice | 5.186mm (7th Octile)

Viewport: Pan to Line | Zoom to Band | Reset

Spectral Type

Spectral Type: ◉ Spectral Line ○ Single Continuum ○ Spectral Scan

Polarization products desired: ○ XX ◉ DUAL ○ FULL

Spectral Setup Errors

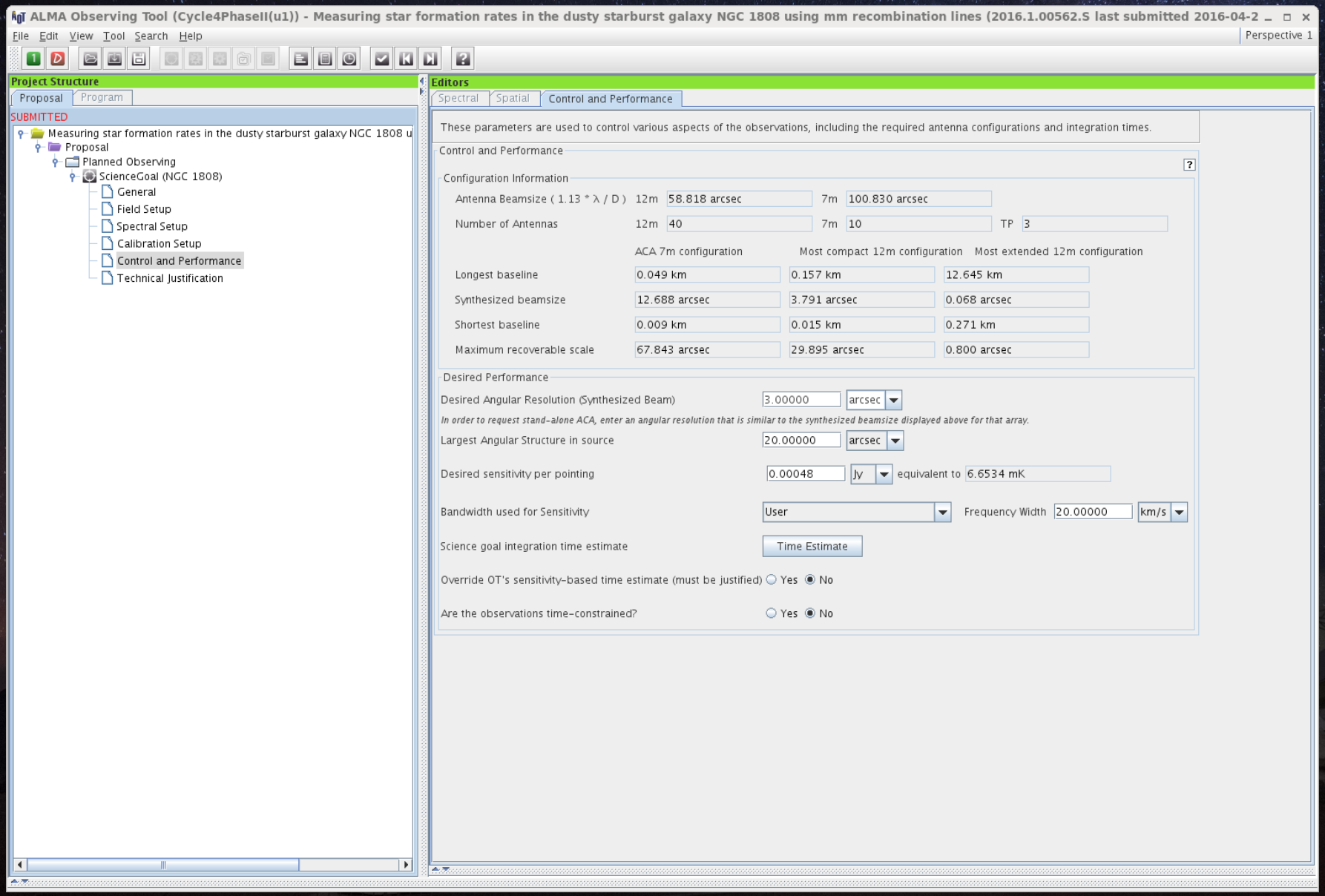
Spectral Line

Baseband-1

Fraction	Centre Freq (rest,hel)	Centre Freq (sky,hel)	Transition	Bandwidth, Resolution (smoothed)	Spec. Avg.	Representative Window
1(Full)	85.63529 GHz	85.35000 GHz	H (42) α	1875.000 MHz(6586 km/s), 1.129 MHz(3.965 km/s)	2	○

Select Lines to Observe in Baseband-1... | Add | Delete

Baseband-2


ALMA Observing Tool (Cycle4PhaseII(u1)) - Measuring star formation rates in the dusty starburst galaxy NGC 1808 using mm recombination lines (2016.1.00562.S last submitted 2016-04-2
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Spectral Spatial Control and Performance
These parameters are used to control various aspects of the observations, including the required antenna configurations and integration times.
Control and Performance
Configuration Information
Antenna Beamsize (1.13 * λ / D) 12m 58.818 arcsec 7m 100.830 arcsec
Number of Antennas 12m 40 7m 10 TP 3
ACA 7m configuration
Most compact 12m configuration
Most extended 12m configuration
Longest baseline 0.049 km 0.157 km 12.645 km
Synthesized beamsize 12.688 arcsec 3.791 arcsec 0.068 arcsec
Shortest baseline 0.009 km 0.015 km 0.271 km
Maximum recoverable scale 67.843 arcsec 29.895 arcsec 0.800 arcsec
Desired Performance
Desired Angular Resolution (Synthesized Beam) 3.00000 arcsec
In order to request stand-alone ACA, enter an angular resolution that is similar to the synthesized beamsize displayed above for that array.
Largest Angular Structure in source 20.00000 arcsec
Desired sensitivity per pointing 0.00048 Jy equivalent to 6.6534 mK
Bandwidth used for Sensitivity User Frequency Width 20.00000 km/s
Science goal integration time estimate Time Estimate
Override OT's sensitivity-based time estimate (must be justified) Yes No
Are the observations time-constrained? Yes No

ALMA Observing Tool (Cycle4PhaseII(u1)) - Measuring star formation rates in the dusty starburst galaxy NGC 1808 using mm recombination lines (2016.1.00562.S last submitted 2016-04-2

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Perspective 1

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        - Spectral Setup
        - Calibration Setup
        - Control and Performance
        - Technical Justification

Editors

Spectral | Spatial | Technical Justification

Enter a Technical Justification for this Science Goal, paying special attention to the parameters reproduced below.

Sensitivity

Requested RMS over 20.000 km/s is 480.00 uJy

For a peak flux density of 9.50 mJy , the S/N is 19.8

Achieved RMS over the total 7.500 GHz bandwidth is 14.20 uJy

For a continuum flux density of 34.00 mJy , the achieved S/N is 2394.5

For a peak line flux of 9.50 mJy , the achieved S/N over 1/3 of the source line width (200.00 km/s / 3 = 66.67 km/s) is 36.2

Line width / bandwidth used for sensitivity (200.00 km/s / 20.00 km/s) = 10.00

Spectral Dynamic Range (continuum flux / line rms): 71.06

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.

Our sensitivity goal is based on detecting the peak of the H40alpha and H42alpha line emission in 20 km/s channels at the 10 sigma level. Based on an inspection of Spitzer 5.7-24 micron images and the radio images published by Roy et al. (2008, A&A, 483, 79), we anticipate that >~50% of the total H40alpha line emission will originate from a <3 arcsec source. The estimated minimum 24 micron emission from this source (based on the 25 micron fluxes from Sanders et al. (2003, AJ, 126, 1607) and after applying a colour correction for a nu^2 power law spectrum) is 6.0 Jy. Using the conversions from 24 micron flux to star formation rate from Rieke et al. (2009, ApJ, 692, 556) and the conversion from star formation rate to H40alpha line flux from Bendo et al. (2015, MNRAS, 450, 180), we estimate the minimum H40alpha line flux for this region is 0.95 Jy

Imaging

Requested angular resolution : 3.00 arcsec

Requested largest angular scale : 20.00 arcsec

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

The 3 arcsec beam produced when the array is in a compact configuration is sufficient for our analysis, as we are primarily interested in detecting the recombination line emission and in comparing the mapped structures to structures observed with 1-6 arcsec beams in optical, near-infrared, and mid-infrared data.

Infrared and radio observations of the central source (Galliano & Alloin, 2008, A&A, 492, 3; Roy et al., 2008, A&A, 483, 79) as well as archival Spitzer data indicate that all of the star formation (and >90% of the infrared and radio emission) originates from a region smaller than 20 arcsec in diameter, which is the largest angular spatial scale we have requested.

Correlator configuration

line width / representative spectral window resolution: 200.00 km/s / 3.41 km/s = 58.59

Representative spectral window width : 5669.30 km/s

At the end of the proposal preparation, click the verify proposal button.

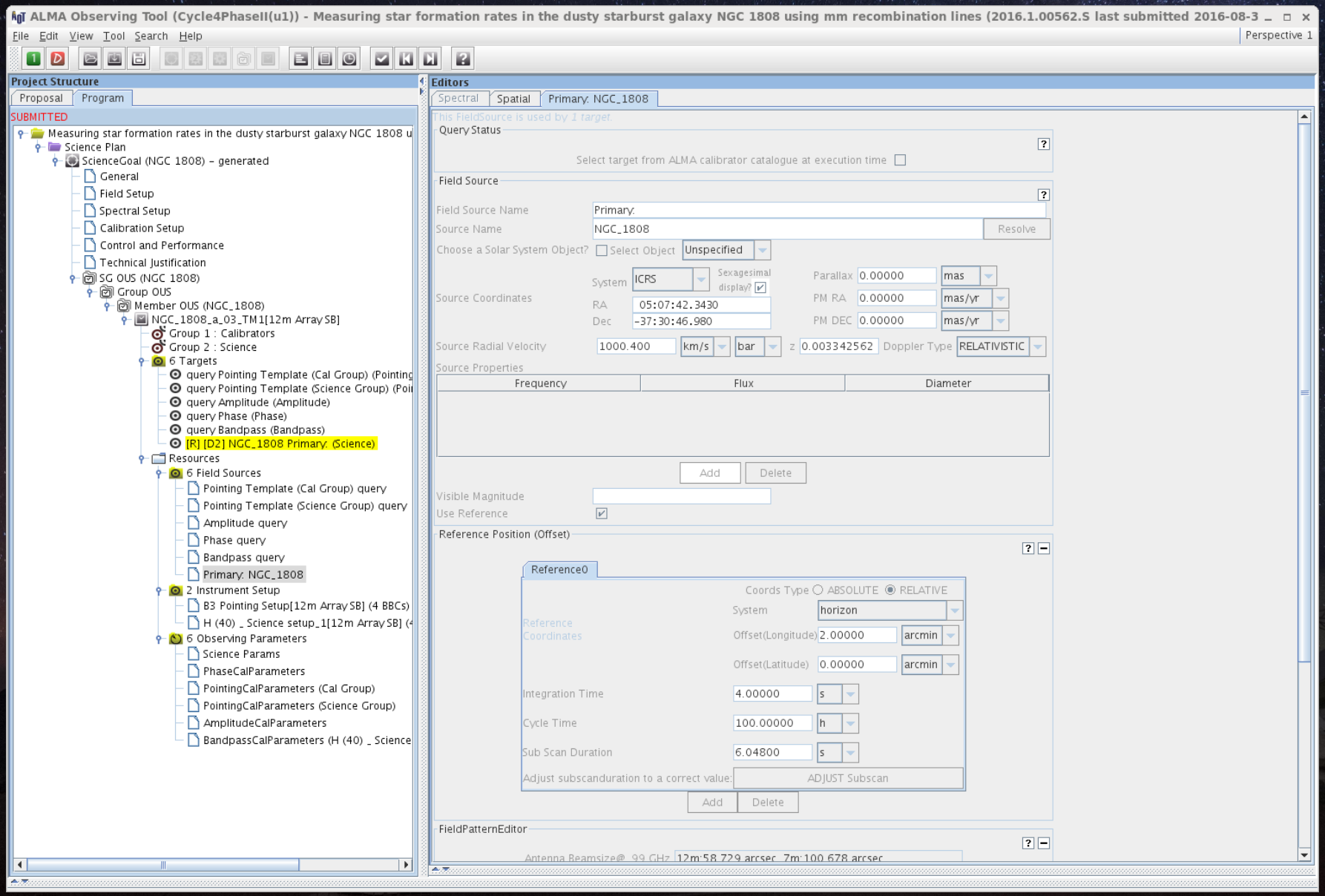
After this, submit the proposal. You should get an email confirming that the proposal was received.

Phase 2: Observation Preparation

Starting with Cycle 4, PIs were responsible for Phase 2, which is the generation of the instructions for the telescope.

After doing this, the PI should perform three checks:

- Check the coordinates of the fields.
- Check the spectral set-up.
- Check the execution time.


ALMA Observing Tool (Cycle4PhaseII(u1)) - Measuring star formation rates in the dusty starburst galaxy NGC 1808 using mm recombination lines (2016.1.00562.S last submitted 2016-08-3
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Measuring star formation rates in the dusty starburst galaxy NGC 1808 u
Science Plan
ScienceGoal (NGC 1808) - generated
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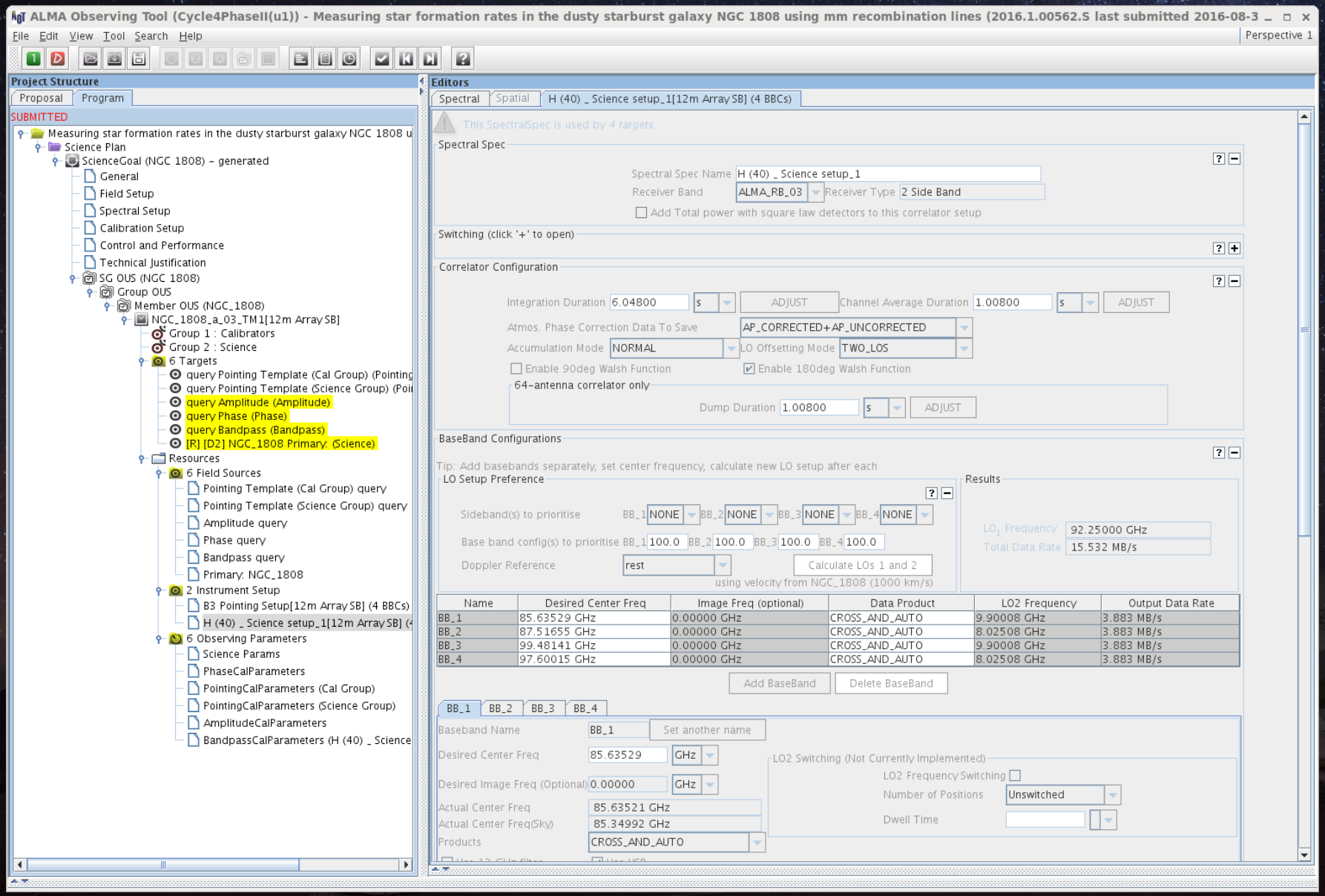
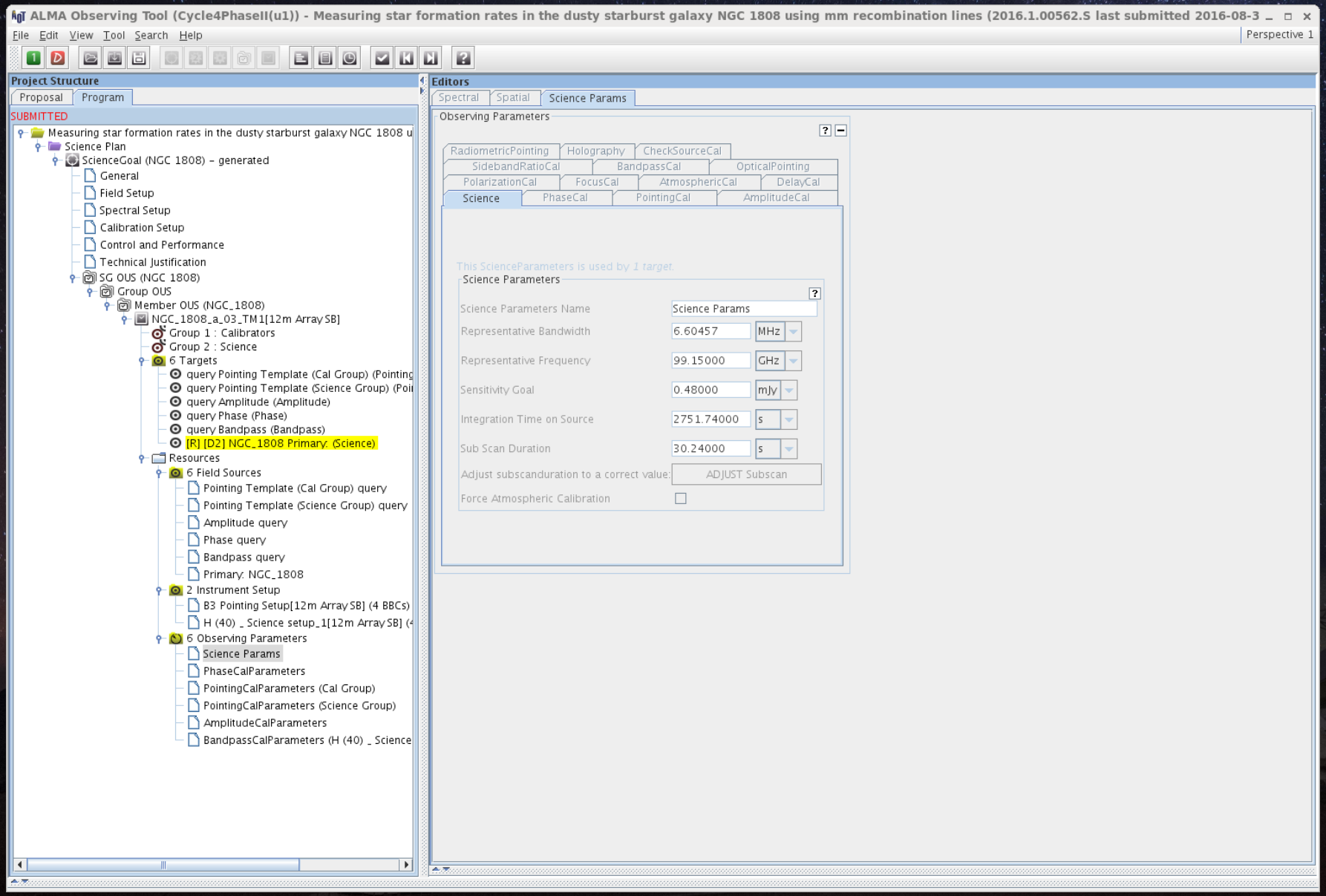
Control and Performance
Technical Justification
SG OUS (NGC 1808)
Group OUS
Member OUS (NGC_1808)
NGC_1808_a_03_TM1[12m Array SB]
Group 1 : Calibrators
Group 2 : Science
6 Targets
query Pointing Template (Cal Group) (Pointing
query Pointing Template (Science Group) (Poi
query Amplitude (Amplitude)
query Phase (Phase)
query Bandpass (Bandpass)
[R] [D2] NGC_1808 Primary: (Science)
Resources
6 Field Sources
Pointing Template (Cal Group) query
Pointing Template (Science Group) query
Amplitude query
Phase query
Bandpass query
Primary: NGC_1808
2 Instrument Setup
B3 Pointing Setup[12m Array SB] (4 BBCs)
H (40) _ Science setup_1[12m Array SB] (4
6 Observing Parameters
Science Params
PhaseCalParameters
PointingCalParameters (Cal Group)
PointingCalParameters (Science Group)
AmplitudeCalParameters
BandpassCalParameters (H (40) _ Science
Editors
Spectral Spatial Primary: NGC_1808
This FieldSource is used by 1 target.
Query Status
Select target from ALMA calibrator catalogue at execution time
Field Source
Field Source Name Primary:
Source Name NGC_1808 Resolve
Choose a Solar System Object? Select Object Unspecified
Source Coordinates System ICRS Sexagesimal display?
RA 05:07:42.3430
Dec -37:30:46.980
Parallax 0.00000 mas
PM RA 0.00000 mas/yr
PM DEC 0.00000 mas/yr
Source Radial Velocity 1000.400 km/s bar z 0.003342562 Doppler Type RELATIVISTIC
Source Properties
Frequency Flux Diameter
Add Delete
Visible Magnitude
Use Reference
Reference Position (Offset)
Reference0
Coords Type ABSOLUTE RELATIVE
Reference Coordinates System horizon
Offset(Longitude) 2.00000 arcmin
Offset(Latitude) 0.00000 arcmin
Integration Time 4.00000 s
Cycle Time 100.00000 h
Sub Scan Duration 6.04800 s
Adjust subscanduration to a correct value: ADJUST Subscan
Add Delete
FieldPatternEditor
Antenna Beamsize@ 99 GHz 12m:58.729 arcsec 7m:100.678 arcsec


ALMA Observing Tool (Cycle4PhaseII(u1)) - Measuring star formation rates in the dusty starburst galaxy NGC 1808 using mm recombination lines (2016.1.00562.S last submitted 2016-08-3
File Edit View Tool Search Help
Perspective 1
Project Structure
Proposal Program
SUBMITTED
Measuring star formation rates in the dusty starburst galaxy NGC 1808 u
Science Plan
ScienceGoal (NGC 1808) - generated
General
Field Setup
Spectral Setup
Calibration Setup
Control and Performance
Technical Justification
SG OUS (NGC 1808)
Group OUS
Member OUS (NGC_1808)
NGC_1808_a_03_TM1[12m Array SB]
Group 1 : Calibrators
Group 2 : Science
6 Targets
query Pointing Template (Cal Group) (Pointing
query Pointing Template (Science Group) (Poi
query Amplitude (Amplitude)
query Phase (Phase)
query Bandpass (Bandpass)
[R] [D2] NGC_1808 Primary: (Science)
Resources
6 Field Sources
Pointing Template (Cal Group) query
Pointing Template (Science Group) query
Amplitude query
Phase query
Bandpass query
Primary: NGC_1808
2 Instrument Setup
B3 Pointing Setup[12m Array SB] (4 BBCs)
H (40) _ Science setup_1[12m Array SB] (4
6 Observing Parameters
Science Params
PhaseCalParameters
PointingCalParameters (Cal Group)
PointingCalParameters (Science Group)
AmplitudeCalParameters
BandpassCalParameters (H (40) _ Science
Editors
Spectral Spatial H (40) _ Science setup_1[12m Array SB] (4 BBCs)
This SpectralSpec is used by 4 targets.
Spectral Spec
Spectral Spec Name H (40) _ Science setup_1
Receiver Band ALMA_RB_03 Receiver Type 2 Side Band
Add Total power with square law detectors to this correlator setup
Switching (click '+' to open)
Correlator Configuration
Integration Duration 6.04800 s ADJUST Channel Average Duration 1.00800 s ADJUST
Atmos. Phase Correction Data To Save AP_CORRECTED+AP_UNCORRECTED
Accumulation Mode NORMAL LO Offsetting Mode TWO_LOS
Enable 90deg Walsh Function Enable 180deg Walsh Function
64-antenna correlator only
Dump Duration 1.00800 s ADJUST
BaseBand Configurations
Tip: Add basebands separately, set center frequency, calculate new LO setup after each
LO Setup Preference
Sideband(s) to prioritise BB_1 NONE BB_2 NONE BB_3 NONE BB_4 NONE
Base band config(s) to prioritise BB_1 100.0 BB_2 100.0 BB_3 100.0 BB_4 100.0
Doppler Reference rest Calculate LOs 1 and 2
using velocity from NGC_1808 (1000 km/s)
Results
LO1 Frequency 92.25000 GHz
Total Data Rate 15.532 MB/s
Name Desired Center Freq Image Freq (optional) Data Product LO2 Frequency Output Data Rate
BB_1 85.63529 GHz 0.00000 GHz CROSS_AND_AUTO 9.90008 GHz 3.883 MB/s
BB_2 87.51655 GHz 0.00000 GHz CROSS_AND_AUTO 8.02508 GHz 3.883 MB/s
BB_3 99.48141 GHz 0.00000 GHz CROSS_AND_AUTO 9.90008 GHz 3.883 MB/s
BB_4 97.60015 GHz 0.00000 GHz CROSS_AND_AUTO 8.02508 GHz 3.883 MB/s
Add BaseBand Delete BaseBand
BB_1 BB_2 BB_3 BB_4
Baseband Name BB_1 Set another name
Desired Center Freq 85.63529 GHz
Desired Image Freq (Optional) 0.00000 GHz
Actual Center Freq 85.63521 GHz
Actual Center Freq(Sky) 85.34992 GHz
Products CROSS_AND_AUTO
LO2 Switching (Not Currently Implemented)
LO2 Frequency Switching
Number of Positions Unswitched
Dwell Time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Pointing Template (Science Group) query
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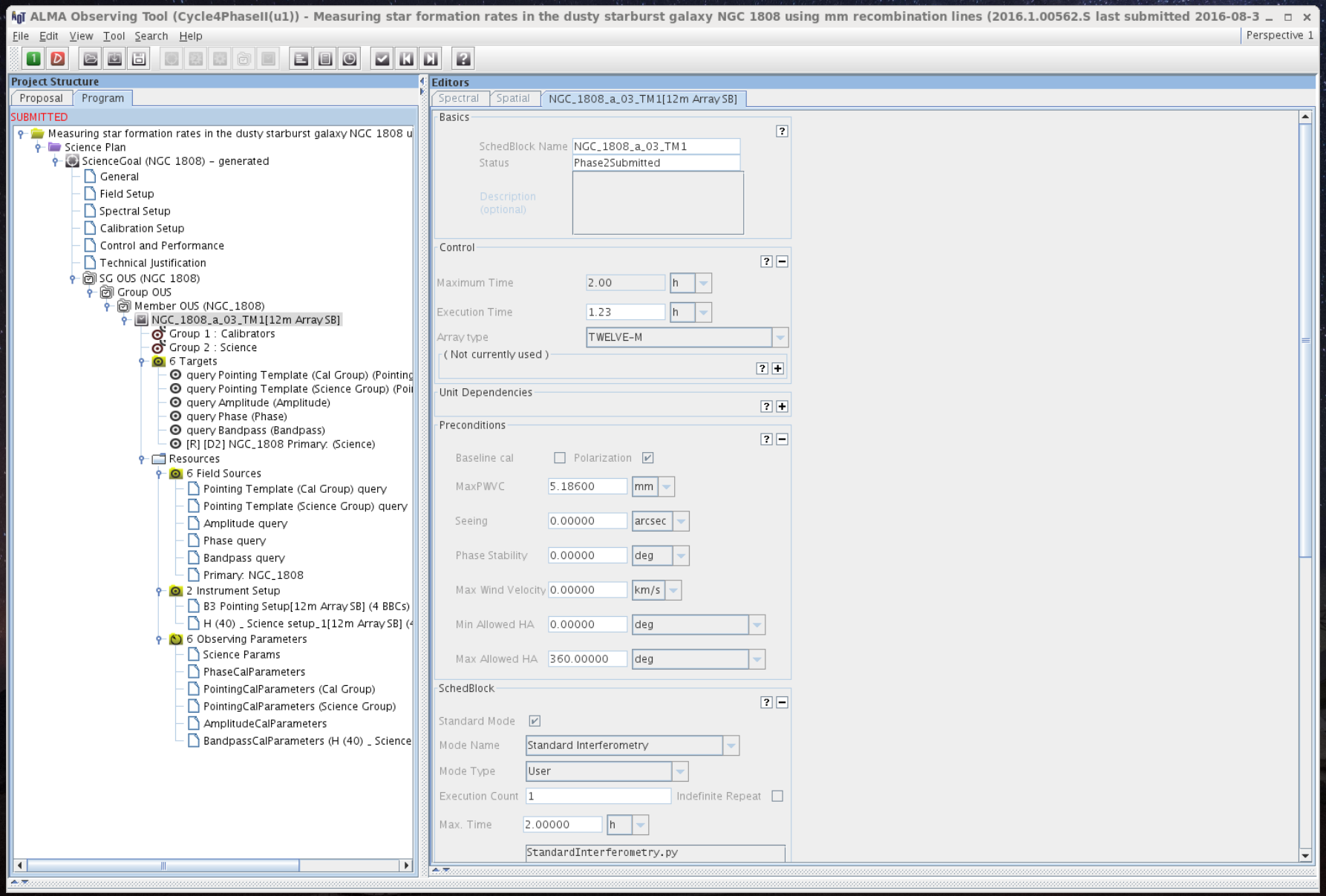
PointingCalParameters (Cal Group)
PointingCalParameters (Science Group)
AmplitudeCalParameters
BandpassCalParameters (H (40) _ Science
Editors
Spectral Spatial Science Params
Observing Parameters
RadiometricPointing Holography CheckSourceCal
SidebandRatioCal BandpassCal OpticalPointing
PolarizationCal FocusCal AtmosphericCal DelayCal
Science PhaseCal PointingCal AmplitudeCal
This ScienceParameters is used by 1 target.
Science Parameters
Science Parameters Name
Science Params
Representative Bandwidth
6.60457
MHz
Representative Frequency
99.15000
GHz
Sensitivity Goal
0.48000
mJy
Integration Time on Source
2751.74000
s
Sub Scan Duration
30.24000
s
Adjust subscanduration to a correct value:
ADJUST Subscan
Force Atmospheric Calibration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Science Params
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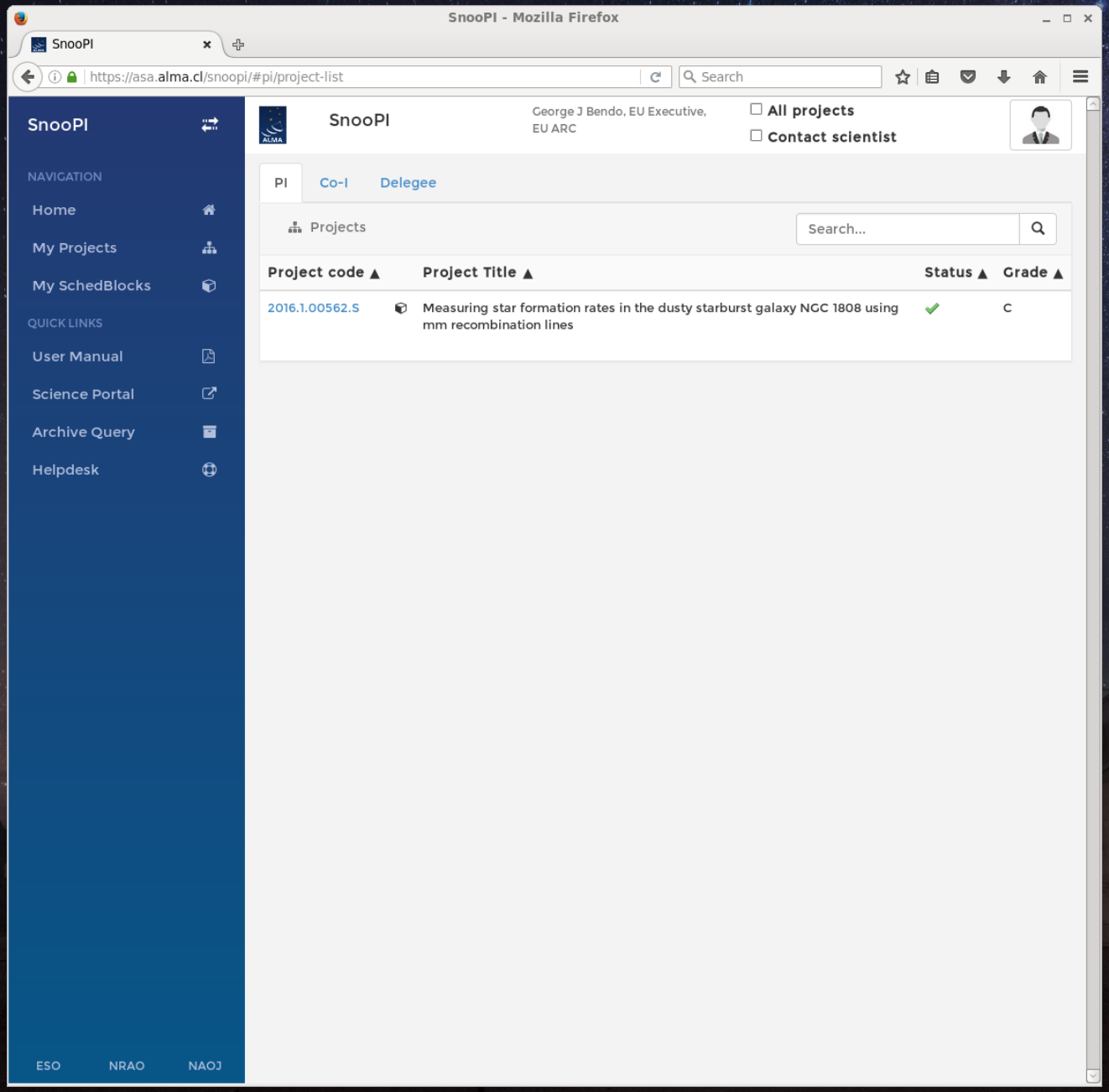
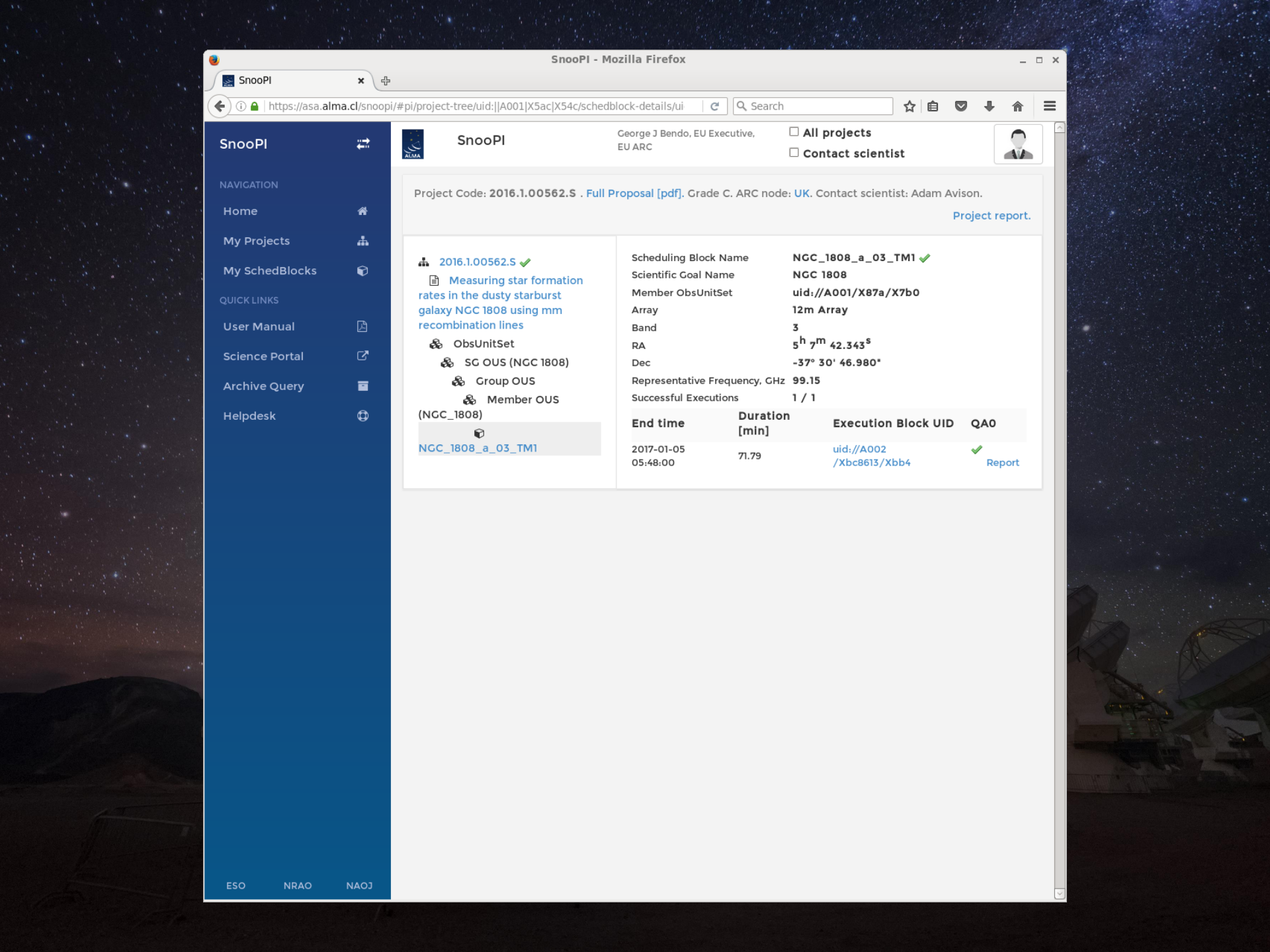
PointingCalParameters (Cal Group)
PointingCalParameters (Science Group)
AmplitudeCalParameters
BandpassCalParameters (H (40) _ Science
Editors
Spectral Spatial NGC_1808_a_03_TM1[12m Array SB]
Basics
SchedBlock Name NGC_1808_a_03_TM1
Status Phase2Submitted
Description (optional)
Control
Maximum Time 2.00 h
Execution Time 1.23 h
Array type TWELVE-M
(Not currently used)
Unit Dependencies
Preconditions
Baseline cal
Polarization
MaxPWV 5.18600 mm
Seeing 0.00000 arcsec
Phase Stability 0.00000 deg
Max Wind Velocity 0.00000 km/s
Min Allowed HA 0.00000 deg
Max Allowed HA 360.00000 deg
SchedBlock
Standard Mode
Mode Name Standard Interferometry
Mode Type User
Execution Count 1
Indefinite Repeat
Max. Time 2.00000 h
StandardInterferometry.py

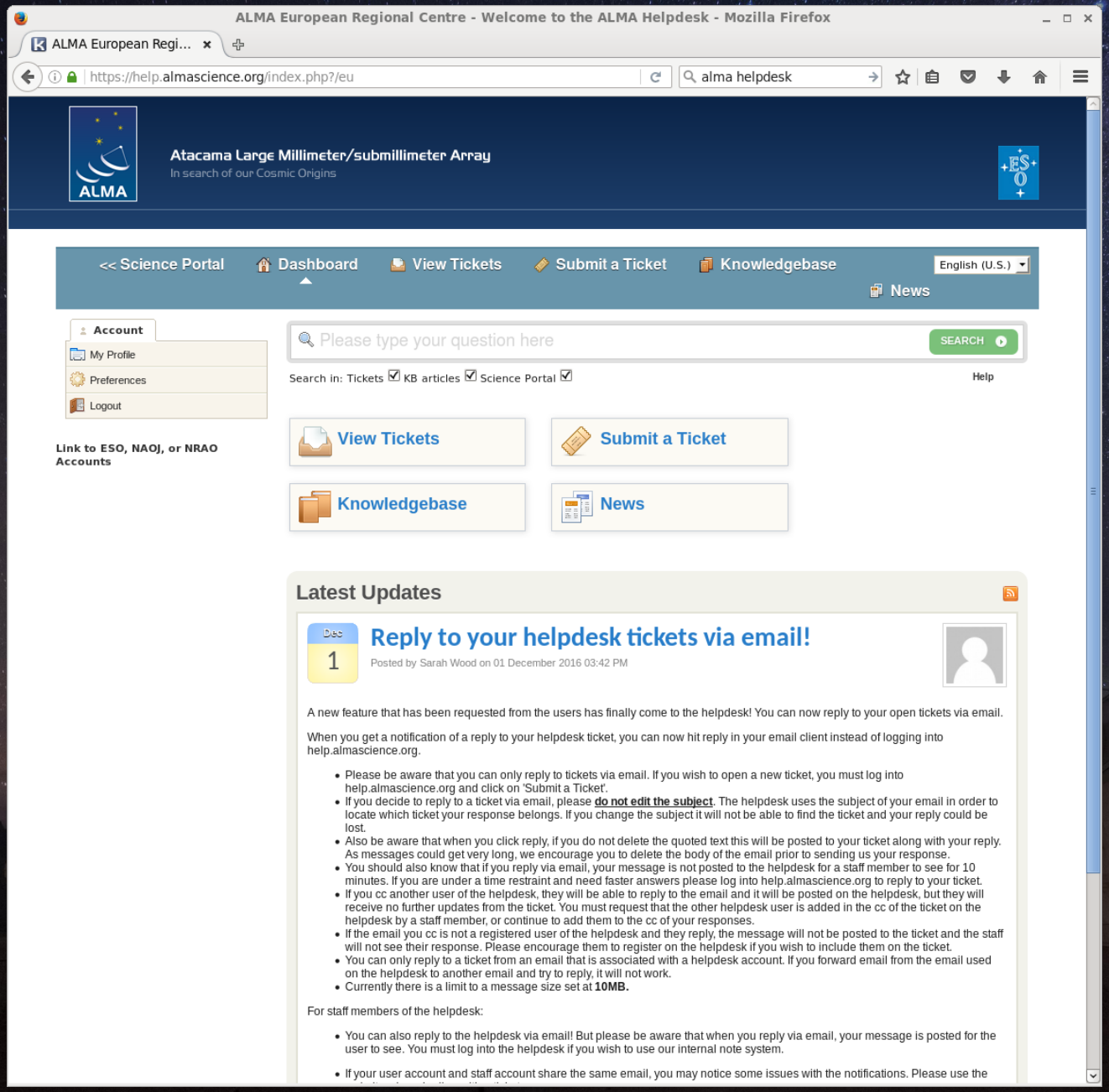
Additional information

Proposals can be tracked using SnooPI.

Communication with ALMA can be done through the ALMA Helpdesk.


SnooPI - Mozilla Firefox
SnooPI
https://asa.alma.cl/snoopi/#pi/project-list
Search
SnooPI
NAVIGATION
Home
My Projects
My SchedBlocks
QUICK LINKS
User Manual
Science Portal
Archive Query
Helpdesk
ESO
NRAO
NAOJ
SnooPI
George J Bendo, EU Executive, EU ARC
All projects
Contact scientist
PI
Co-I
Delegee
Projects
Search...
Project code
Project Title
Status
Grade
2016.1.00562.S
Measuring star formation rates in the dusty starburst galaxy NGC 1808 using mm recombination lines
C


SnooPI - Mozilla Firefox
SnooPI
https://asa.alma.cl/snoopi/#pi/project-tree/uid:|A001|X5ac|X54c/schedblock-details/ui
Search
SnooPI
NAVIGATION
Home
My Projects
My SchedBlocks
QUICK LINKS
User Manual
Science Portal
Archive Query
Helpdesk
ESO
NRAO
NAOJ
SnooPI
George J Bendo, EU Executive, EU ARC
All projects
Contact scientist
Project Code: 2016.1.00562.S . Full Proposal [pdf]. Grade C. ARC node: UK. Contact scientist: Adam Avison.
Project report.
2016.1.00562.S
Measuring star formation rates in the dusty starburst galaxy NGC 1808 using mm recombination lines
ObsUnitSet
SG OUS (NGC 1808)
Group OUS
Member OUS (NGC_1808)
NGC_1808_a_03_TM1
Scheduling Block Name NGC_1808_a_03_TM1
Scientific Goal Name NGC 1808
Member ObsUnitSet uid://A001/X87a/X7b0
Array 12m Array
Band 3
RA 5h 7m 42.343s
Dec -37° 30' 46.980"
Representative Frequency, GHz 99.15
Successful Executions 1 / 1
End time
Duration [min]
Execution Block UID
QA0
2017-01-05 05:48:00
71.79
uid://A002 /Xbc8613/Xbb4
Report


ALMA European Regional Centre - Welcome to the ALMA Helpdesk - Mozilla Firefox
ALMA European Regi...
https://help.almascience.org/index.php?/eu
alma helpdesk
Atacama Large Millimeter/submillimeter Array
In search of our Cosmic Origins
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Submit a Ticket
Knowledgebase
English (U.S.)
News
Account
My Profile
Preferences
Logout
Link to ESO, NAOJ, or NRAO Accounts
Please type your question here
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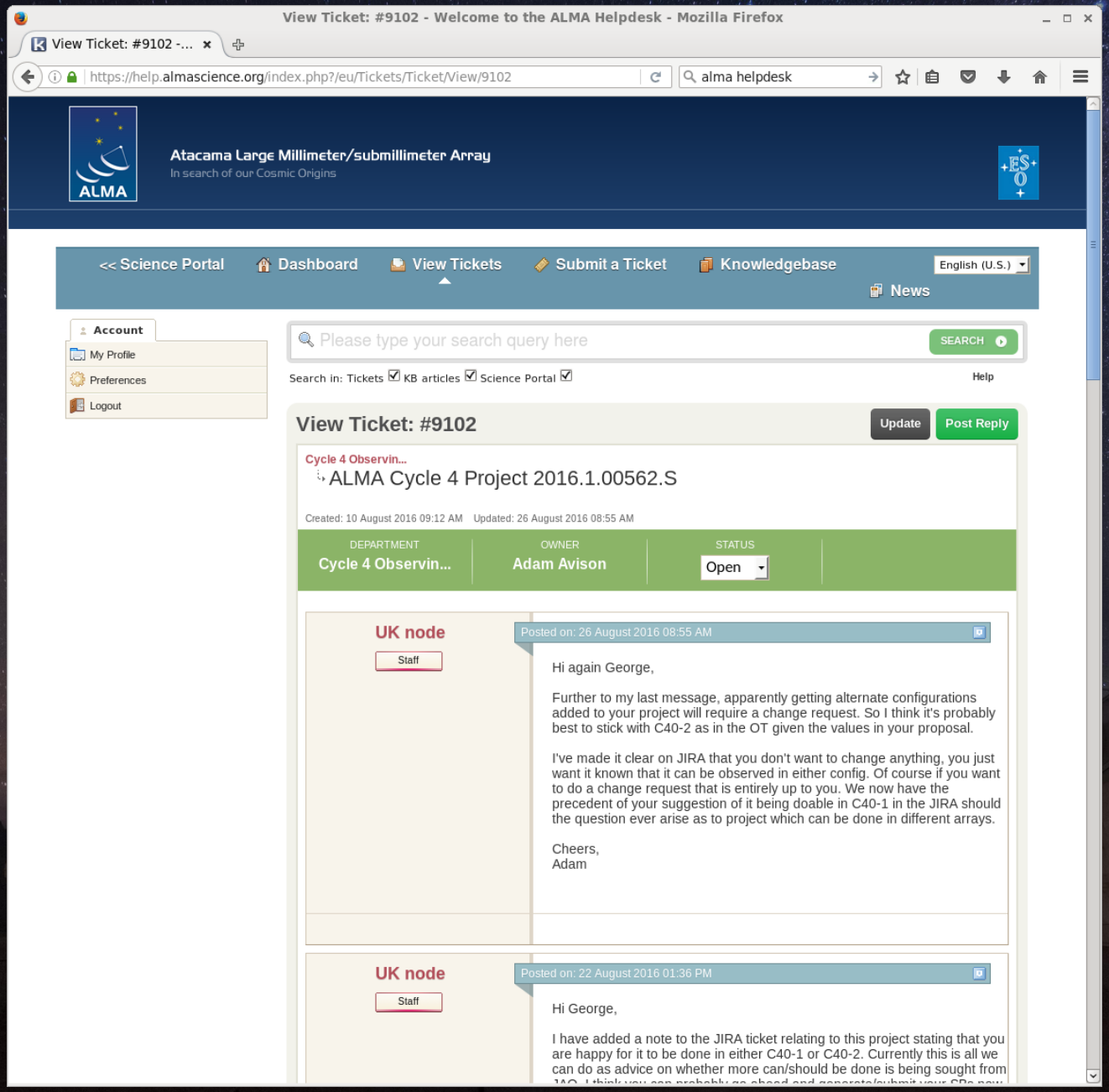
Search in: Tickets KB articles Science Portal
Help
View Tickets
Submit a Ticket
Knowledgebase
News
Latest Updates
Dec
1
Reply to your helpdesk tickets via email!
Posted by Sarah Wood on 01 December 2016 03:42 PM
A new feature that has been requested from the users has finally come to the helpdesk! You can now reply to your open tickets via email.
When you get a notification of a reply to your helpdesk ticket, you can now hit reply in your email client instead of logging into help.almascience.org.
Please be aware that you can only reply to tickets via email. If you wish to open a new ticket, you must log into help.almascience.org and click on 'Submit a Ticket'.
If you decide to reply to a ticket via email, please do not edit the subject. The helpdesk uses the subject of your email in order to locate which ticket your response belongs. If you change the subject it will not be able to find the ticket and your reply could be lost.
Also be aware that when you click reply, if you do not delete the quoted text this will be posted to your ticket along with your reply. As messages could get very long, we encourage you to delete the body of the email prior to sending us your response.
You should also know that if you reply via email, your message is not posted to the helpdesk for a staff member to see for 10 minutes. If you are under a time restraint and need faster answers please log into help.almascience.org to reply to your ticket.
If you cc another user of the helpdesk, they will be able to reply to the email and it will be posted on the helpdesk, but they will receive no further updates from the ticket. You must request that the other helpdesk user is added in the cc of the ticket on the helpdesk by a staff member, or continue to add them to the cc of your responses.
If the email you cc is not a registered user of the helpdesk and they reply, the message will not be posted to the ticket and the staff will not see their response. Please encourage them to register on the helpdesk if you wish to include them on the ticket.
You can only reply to a ticket from an email that is associated with a helpdesk account. If you forward email from the email used on the helpdesk to another email and try to reply, it will not work.
Currently there is a limit to a message size set at 10MB.
For staff members of the helpdesk:
You can also reply to the helpdesk via email! But please be aware that when you reply via email, your message is posted for the user to see. You must log into the helpdesk if you wish to use our internal note system.
If your user account and staff account share the same email, you may notice some issues with the notifications. Please use the


View Ticket: #9102 - Welcome to the ALMA Helpdesk - Mozilla Firefox
View Ticket: #9102 -...
https://help.almascience.org/index.php?/eu/Tickets/Ticket/View/9102
alma helpdesk
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Preferences
Logout
Please type your search query here
SEARCH
Search in: Tickets KB articles Science Portal
Help
View Ticket: #9102
Update
Post Reply
Cycle 4 Observin...
ALMA Cycle 4 Project 2016.1.00562.S
Created: 10 August 2016 09:12 AM Updated: 26 August 2016 08:55 AM
DEPARTMENT
Cycle 4 Observin...
OWNER
Adam Avison
STATUS
Open
UK node
Staff
Posted on: 26 August 2016 08:55 AM
Hi again George,
Further to my last message, apparently getting alternate configurations added to your project will require a change request. So I think it's probably best to stick with C40-2 as in the OT given the values in your proposal.
I've made it clear on JIRA that you don't want to change anything, you just want it known that it can be observed in either config. Of course if you want to do a change request that is entirely up to you. We now have the precedent of your suggestion of it being doable in C40-1 in the JIRA should the question ever arise as to project which can be done in different arrays.
Cheers,
Adam
UK node
Staff
Posted on: 22 August 2016 01:36 PM
Hi George,
I have added a note to the JIRA ticket relating to this project stating that you are happy for it to be done in either C40-1 or C40-2. Currently this is all we can do as advice on whether more can/should be done is being sought from