

# ALMA Proposal Preparation Tutorials



EUROPEAN ARC  
ALMA Regional Centre || Germany



Argelander-  
Institut  
für  
Astronomie



Universität zu  
*Köln*

# The Life of an ALMA Project

## Part 2

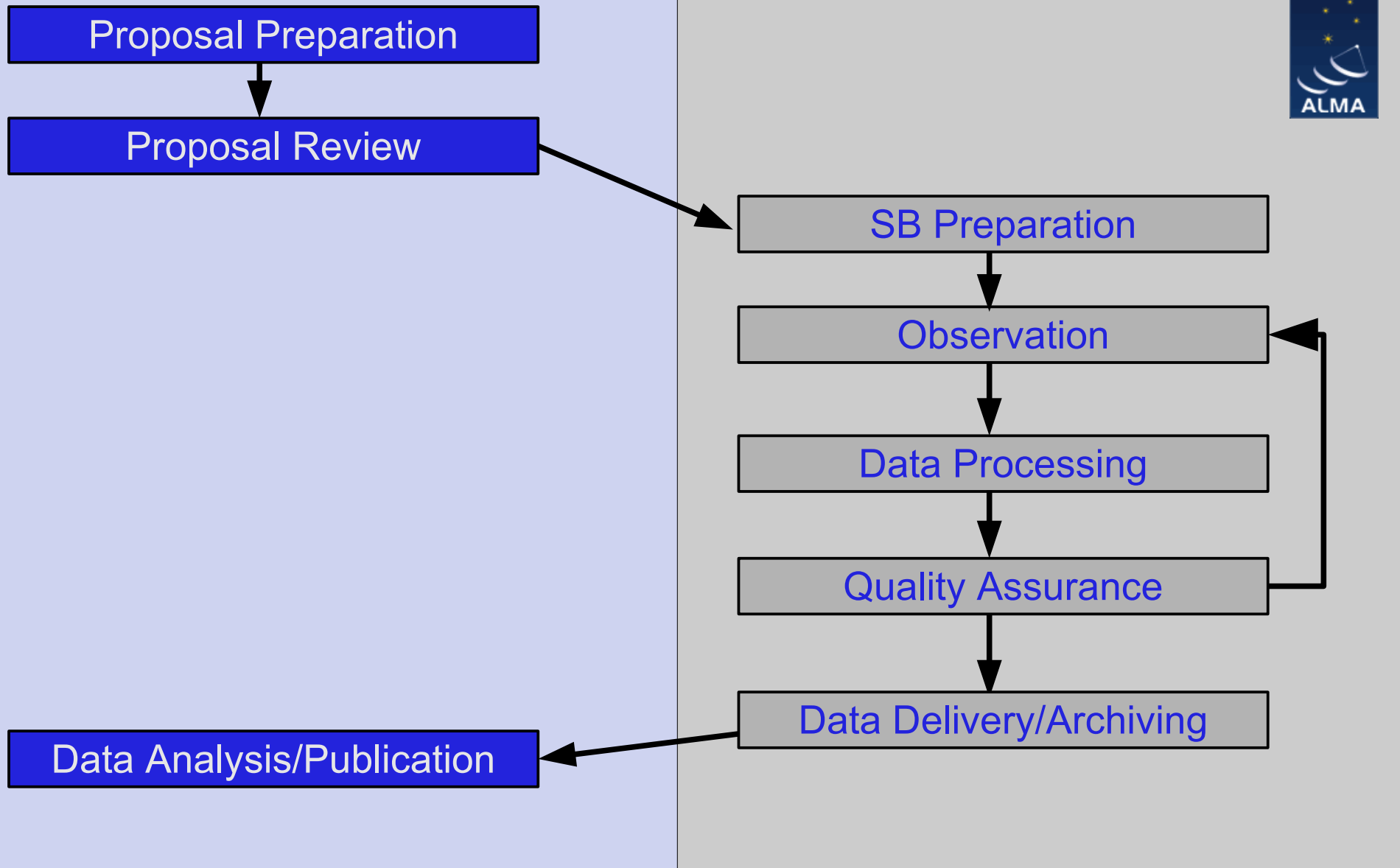
## From the Proposal to Published Results

Reinhold Schaaf

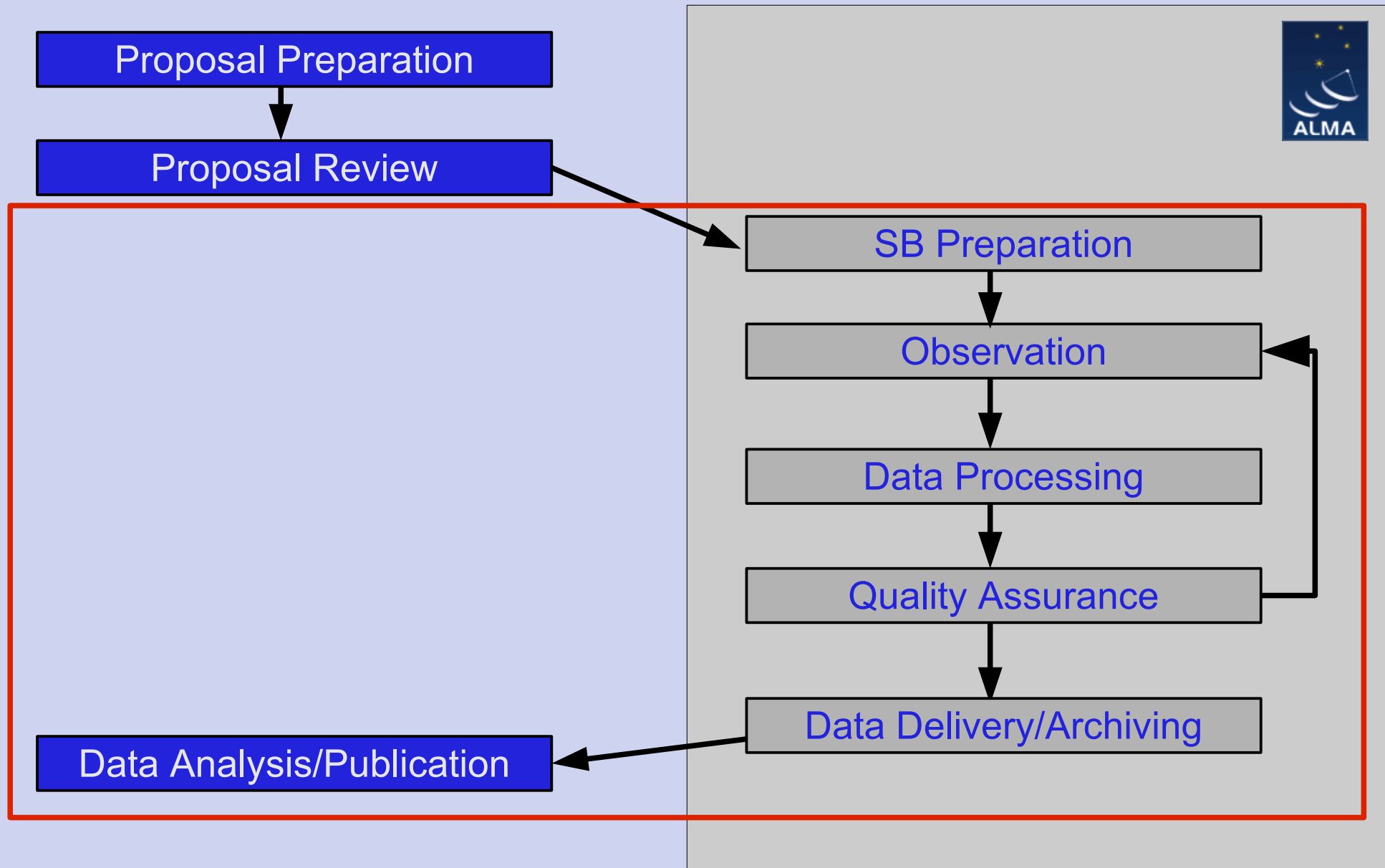
Argelander-Institut für Astronomie  
der Universität Bonn

German ARC node

# The Life of an ALMA Project



# The Life of an ALMA Project



# Outcome of Proposal Review

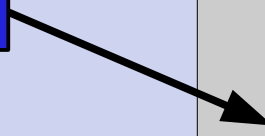
- PI will receive notification (August 2022)
  - Assigned grade
  - Consensus report of review panel or complete reviews from distributed review process
- Grades for accepted proposals:
  - **A:** Highest priority, carried over to following cycle if not completed
  - **B:** Highest priority, not carried over to following cycle
  - **C:** Filler project, executed if conditions allow no higher priority project

# SB Preparation

Proposal Preparation



Proposal Review



SB Preparation



Observation



Data Processing



Quality Assurance



Data Delivery/Archiving



Data Analysis/Publication



# SB Preparation

- *Aka Phase 2*
- Scheduling Blocks (SBs) are smallest observable units
- SB Preparation: Make proposal actually executable
  - Performed by ALMA
- Alma assigns a Contact Scientist (CS) at an ARC node
  - CS is interface between ALMA and PI
  - Communication via ALMA Help Desk only

# SB Preparation

- If changes wrt submitted proposal necessary, change requests may be submitted after completion of review process
  - Change requests must go through ALMA Help Desk
  - Major changes must be approved formally
  - Make sure everything is correct on proposal submission!

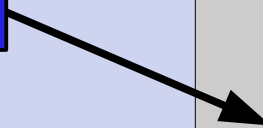


# Observation

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# Observation

- Individual SBs are executed repeatedly until
  - scientific goals as defined in proposal are achieved or
  - scheduling period has ended or
  - no more fitting array configurations in scheduling period
- Observations require no interaction with PI
  - Exceptions: ToO, Solar, mmVLBI
  - If interaction necessary: Through help desk between PI and CS

# Observation

- *SnooPI* (accessed through ALMA Science Portal) gives PI, co-PIs and co-Is status of project
  - Overall execution status
  - Detailed reports down to individual executions of SBs
- User Profile at Science Portal has option for email notifications on observation progress

# Observation

SnooPI - Mozilla Firefox

Welcome to the Sc... x SnooPI

https://asa.alma.cl/snoopi/#cs/project-tree/uid://A001/X5ac) | Suchen

- 2016.001018
- Molecular core phase
- ObsUnitSet
  - SG OUS (Science Goal)
    - Group OUS
      - Member OUS (S14)
        - S14\_a\_06\_TM1
      - Group OUS
        - Member OUS (S58)
          - S58\_a\_06\_TM1
        - Group OUS
          - Member OUS (S10)
            - S10\_a\_06\_TM1
          - Group OUS
            - Member OUS (S63)
              - S63\_a\_06\_TM1
            - Group OUS
              - Member OUS (S33)
                - S33\_a\_06\_TM1
              - Group OUS
                - Member OUS (S01)
                  - S01\_a\_06\_TM1

Scheduling Block Name: S14\_a\_06\_TM1 ✓

Scientific Goal Name: Science Goal

Member ObsUnitSet: uid://A001/X879/XaOf

Array: 12m

Nominal configuration: C40-2

Band: 6

RA: [blurred]

Dec: [blurred]

Representative Frequency, GHz: 220.44

Successful Executions: 1 / 1

QA2: ✓ [Report](#)

| End time            | Duration [min] | Execution Block UID      | QA0                      |
|---------------------|----------------|--------------------------|--------------------------|
| 2016-12-29 11:52:46 | 73.32          | uid://A002/Xbc4a22/X1dcd | ✓ <a href="#">Report</a> |

Execution block

| Temperatures [°K]        |        | Array                     |              |
|--------------------------|--------|---------------------------|--------------|
| Average $T_{\text{sys}}$ | 112.52 | Number of antennas        | 45           |
| $\sigma$                 | 14.24  | Shortest baseline         | 15.100 m     |
| $T_{\text{sys,min}}$     | 90.83  | Longest baseline          | 459.996 m    |
| $T_{\text{sys,max}}$     | 231.68 | Angular resolution        | 0.69 arcsec  |
|                          |        | Maximum Recoverable Scale | 6.049 arcsec |

# Observation

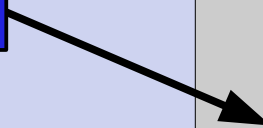
- ALMA Status page (accessed through ALMA Science Portal) gives information about
  - Current status of weather, array etc.
  - Observing reports of finished observation blocks
  - Observing and configuration schedule for remaining part of cycle

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Quality Assurance



Data Delivery/Archiving



Data Analysis/Publication



# Data Processing

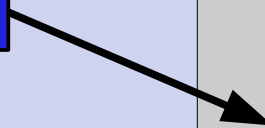
- Purpose: Make sure results meet criteria specified in proposal and is of good quality
- Performed by ALMA with CASA
- Involves calibration, flagging, imaging

# Quality Assurance

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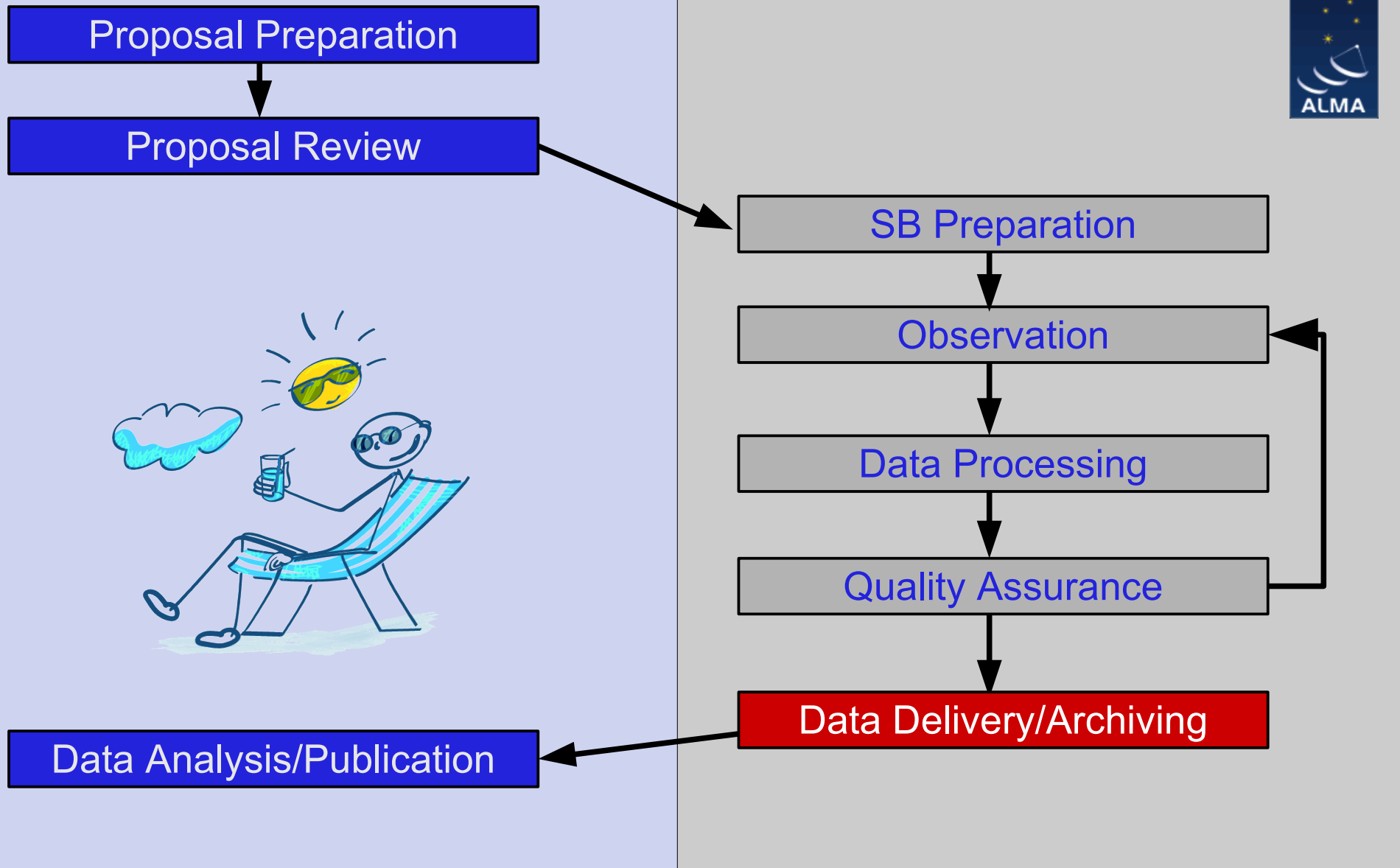




# Quality Assurance

- QA0 during data taking
- QA1 long-term performance monitoring (not specific to projects)
- QA2 during data processing
  - Failure to meet pass criteria leads automatically to re-observation of affected SBs if scheduling is possible
- QA3 after data delivery
  - Feedback from PI through help desk
  - ASAP, since re-observation may be necessary and proprietary period may be affected (s. *Users' Policies* for details)

# Data Delivery/Archiving



# Data Delivery/Archiving

- All data that passes QA2 ingested into ALMA Archive
  - Located in Santiago
  - Mirrors at each ARC
  - European mirror at ESO Garching
- PI informed via email that data is available for download from Science Archive
- Only PI can download data
  - Data delegation (grant access to project data to other ALMA users) possible via Science Portal

# Data Delivery/Archiving

- Data package includes
  - Visibiliy Data
  - All Data Products from QA2
    - Calibration & imaging products
    - Fits images & cubes
    - QA2 report
    - Data processing script
    - Processing log files
- Delivery of Raw Data before QA2 can be requested by PI
  - Will trigger start of proprietary period

# Data Delivery/Archiving

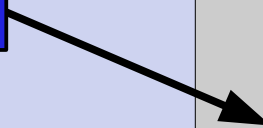
- Proprietary period 12 months
  - DDT proposals: 6 months
  - Clock starts when PI is informed that data available for download
  - Parental / military / sick leaves may be added to proprietary period on request
  - Problems with delivered data may under particular circumstances lead to extension of proprietary period (s. *Users' Policies* for details)

# Data Analysis/Publication

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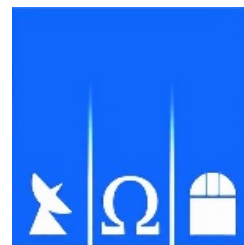
# Data Analysis/Publication

- CASA
- You are not on your own! Your ARC node provides help
  - Expert advice for data analysis questions
  - Face-to-face support on request
- Don't forget the standard ALMA acknowledgement (s. *Users' Policies*) in publications!
- If you got help from your ARC, an acknowledgement of this help is acknowledged :-)

# Questions?

Join our virtual community day or  
contact us at [arc@astro.uni-bonn.de](mailto:arc@astro.uni-bonn.de)

[www.astro.uni-bonn.de/ARC/events/proposalprep2022](http://www.astro.uni-bonn.de/ARC/events/proposalprep2022)



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