EUROPEAN ARC
ALMA Regional Centre || German

Argelander-Institut für Astronomie

The life of an ALMA project

From a proposal to delivered data

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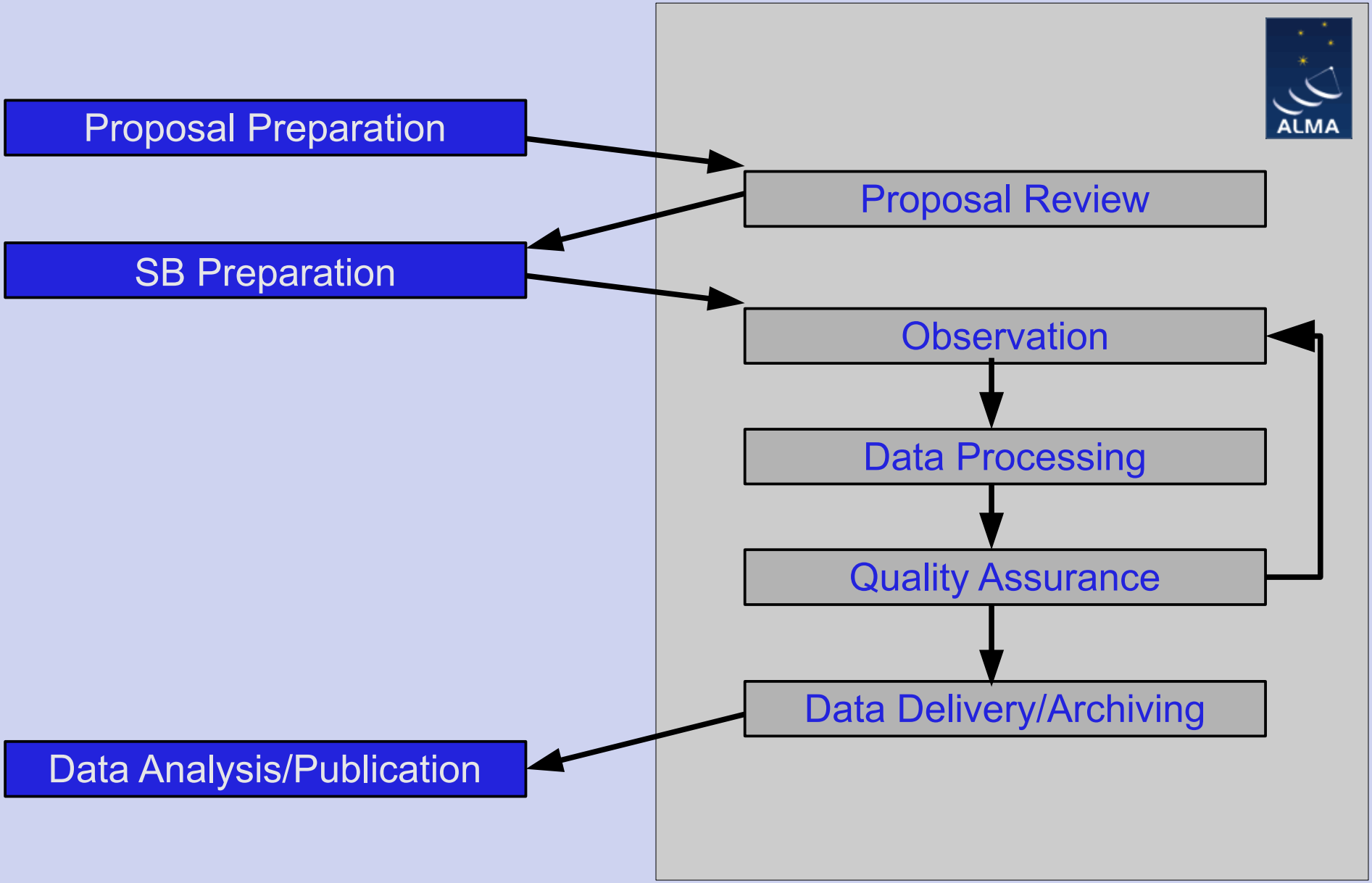
German ALMA Community Days 2015

The life of an ALMA project



Proposal Preparation

Proposal Preparation

SB Preparation

Data Analysis/Publication

ALMA

Proposal Review

Observation

Data Processing

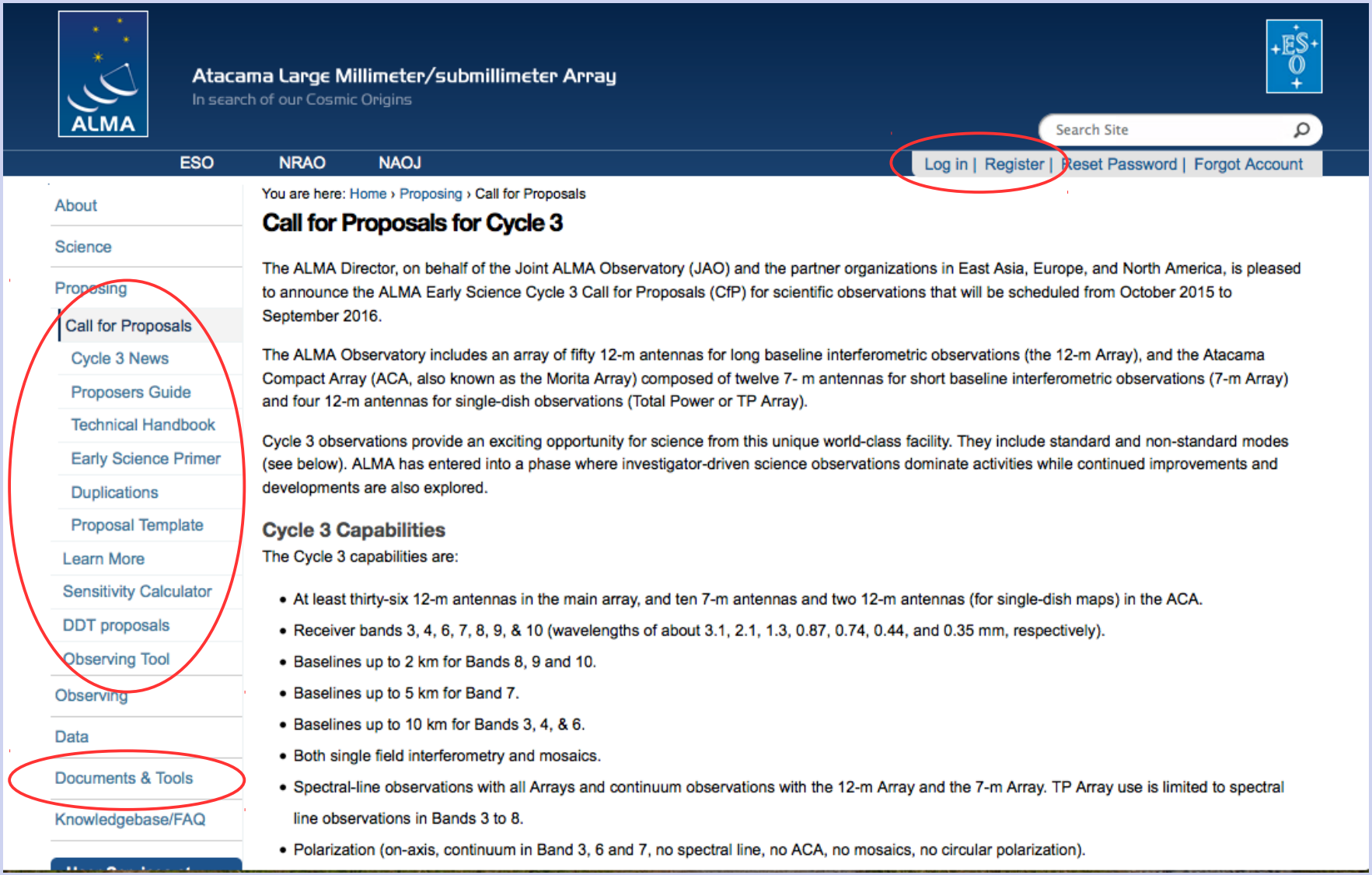
Quality Assurance

Data Delivery/Archiving

Proposal Preparation

- First stop: ALMA Science Portal www.almascience.org/
  - Get ALMA Account (PI and all co-Is)
  - Get latest version of OT (Webstart version recommended)
  - Get Cycle 3 documentation
    - Proposer's Guide
    - Technical Handbook
    - OT documentation
    - ...

Proposal Preparation



Proposal Preparation

- OT allows
  - Preparation & validation of proposal
  - Local storage of proposals
  - Submission and multiple re-submissions until deadline

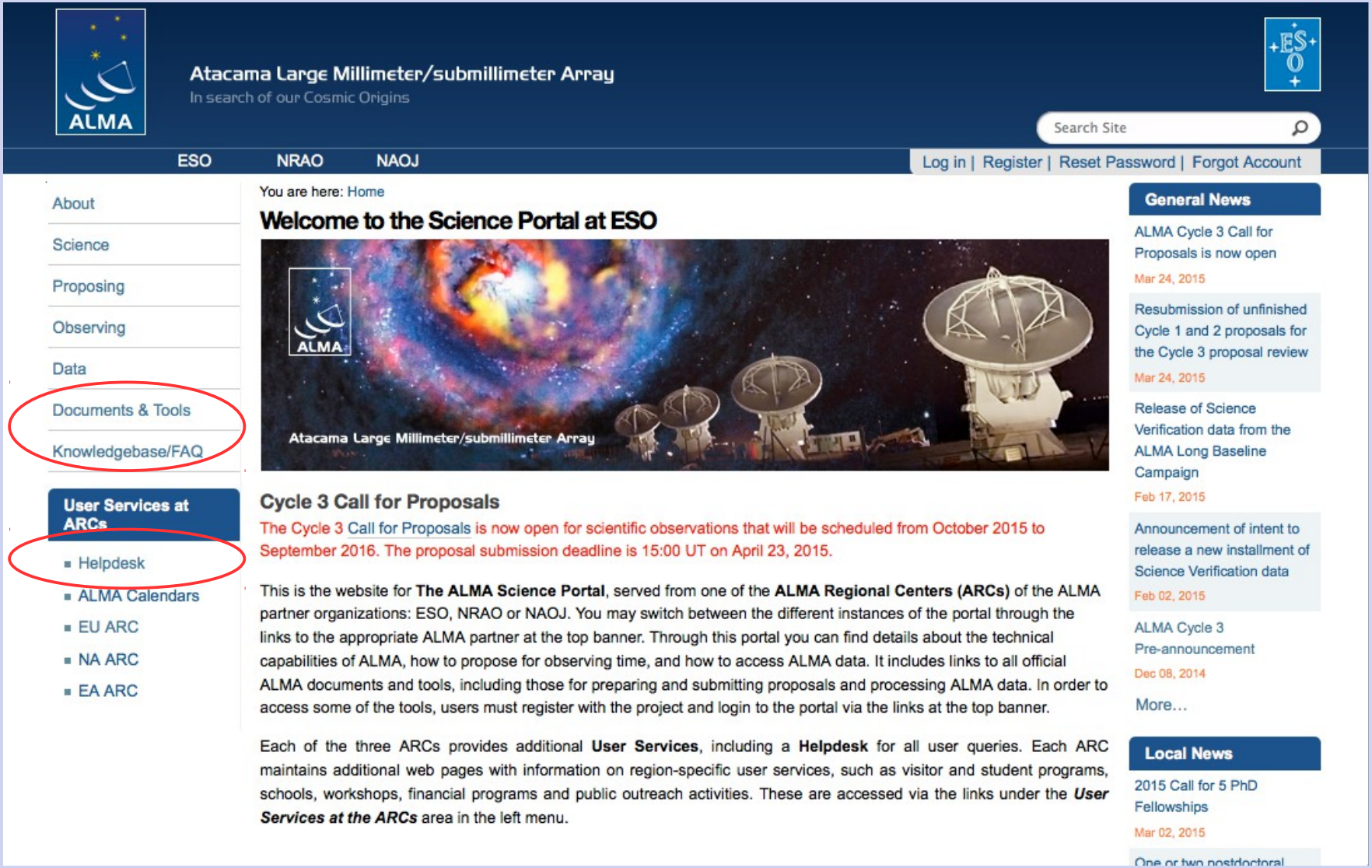
23 April 2015, 15:00 UT

- Only PI can submit
  - Collaboration by sharing locally stored proposals

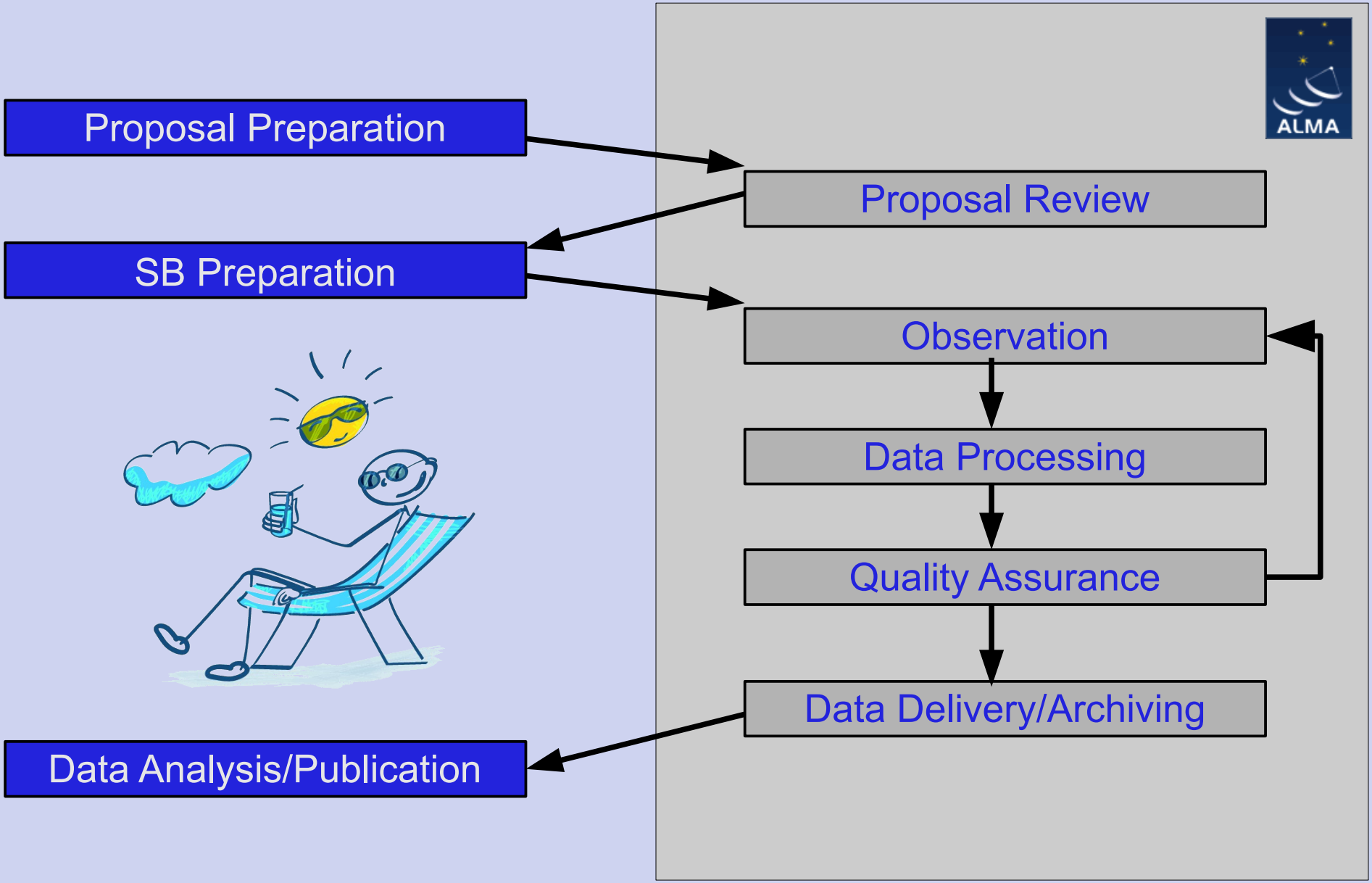
Proposal Preparation

- ALMA highly over-subscribed, so proposals must be strong
  - Science case
  - Technical justification
  - Possibly simulations
- Support:
  - OT documentation
  - Knowledge base
  - ALMA Helpdesk
  - ARC nodes

Proposal Preparation



Proposal Review



Proposal Review

- Every proposal will be assessed
  - Scientifically (at least one review panel per science category)
  - Technically by ALMA experts
- PI will receive notification (Aug 2015)
  - Overall ranking
  - Priority flag
  - Report on scientific strengths and weaknesses
  - Report on technical feasibility

Proposal Review

- Priority flags:
  - A: Highest priority, carried over to Cycle 4 if not completed in Cycle 3
  - B: Highest priority, not carried over to Cycle 4
  - C: Filler project, executed if conditions allow no higher priority project
  - All other flags: Project will not be observed

Proposal Review

- For A and B projects, the following will be made public immediately:
  - Project code
  - Proposal title and abstract
  - Name and region of PI
  - Names of co-Is
- For C projects this data is made public as soon as first data are taken

Proposal Review

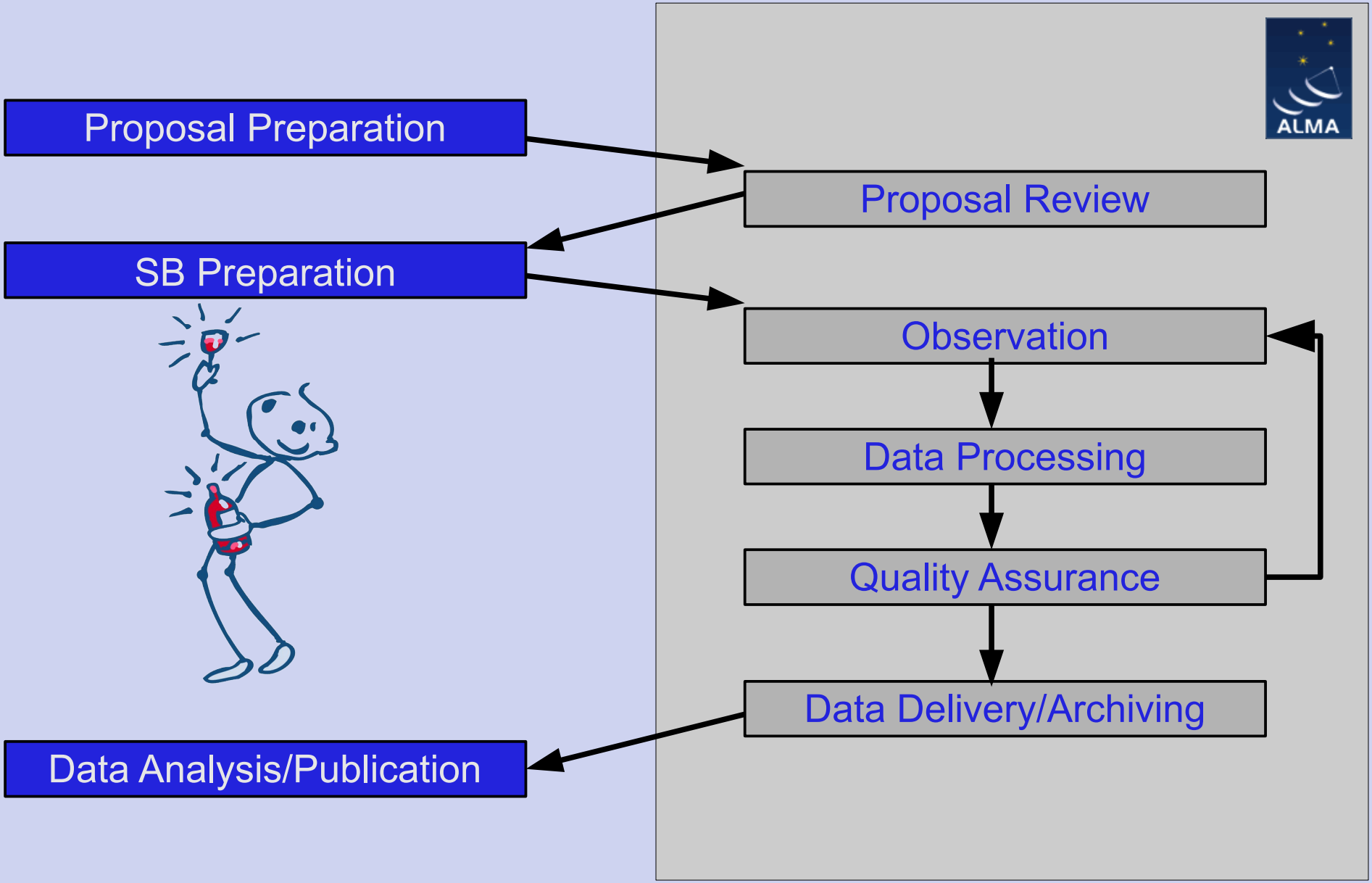
- Regional shares:
  - Europe: 33.75%
  - North America: 33.75%
  - East Asia: 22.5%
  - Chile: 10%
  - Open Sky: up to 5%

Proposal Review

- Policies for
  - Duplications
  - De-scoping
  - Non-standard observing modes (up to 25% of total observing time)
  - Science Goals that include ACA observations

see documents “Proposer's Guide” and “ALMA Users' Policies”

SB Preparation



SB Preparation

- Scheduling Blocks (SBs) are smallest observable units
- SB Preparation (aka Phase 2): Make proposal actually executable
- Several weeks before project is scheduled for observation
- ALMA will inform PIs when SB preparation for their project is due

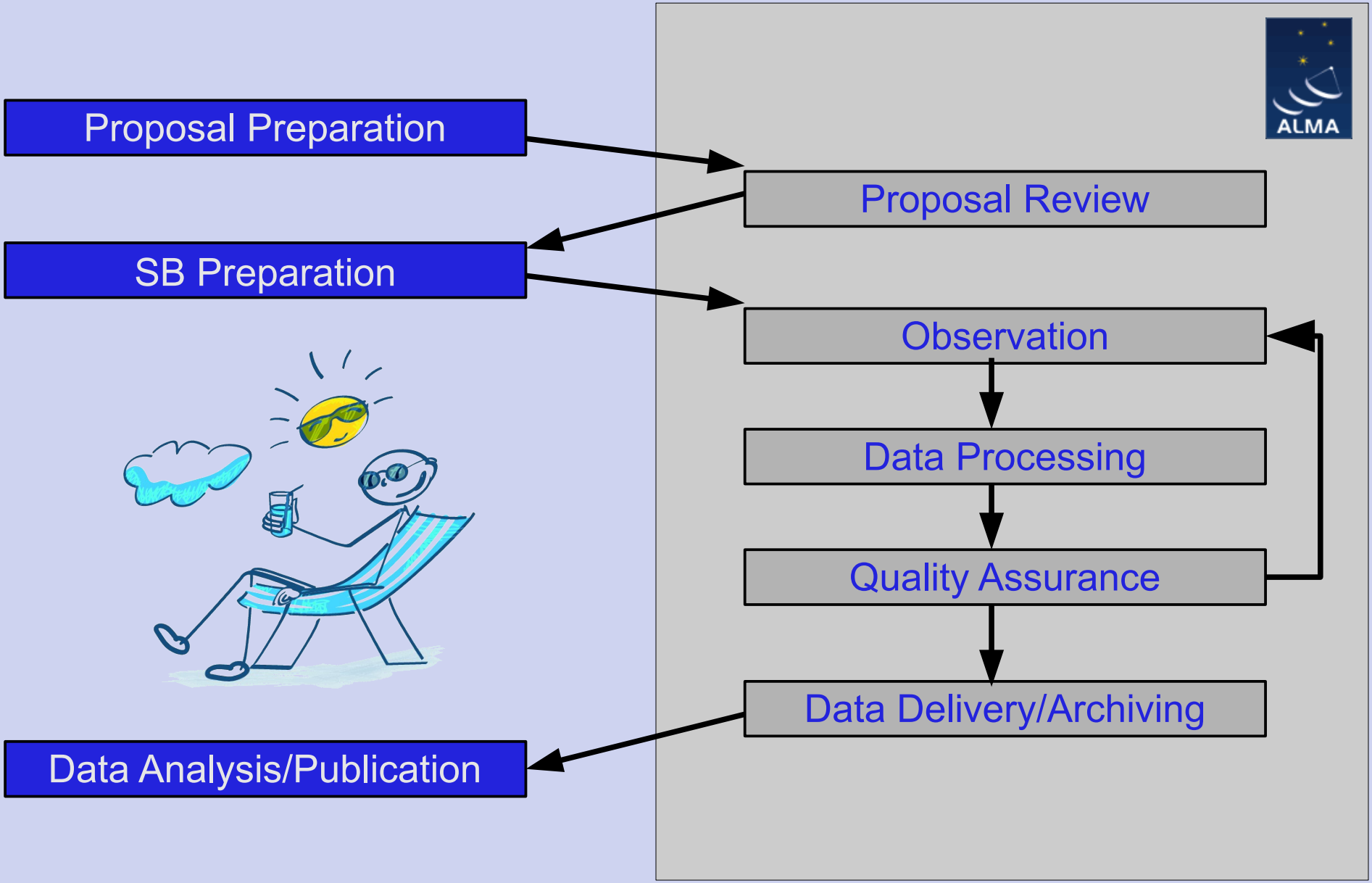
SB Preparation

- ALMA
  - Makes initial SB setup
  - Assigns a Contact Scientist (CS) at an ARC node
  - Opens a helpdesk ticket for communication between PI and CS
- SBs can be viewed/edited with OT
  - PI inspects SBs and iterates them with CS through helpdesk
  - PI approves SBs formally in helpdesk for execution

SB Preparation

- Minor changes are possible, e.g.
  - Change in target position no more than half a primary beam width
  - Change in target frequency no more than 20% of width of original spectral window
  - Change of velocity reference frame
- All other changes require formal change request and are strongly discouraged

Observation



Observation

- Observations require no interaction with PI
- Individual SBs are executed repeatedly until scientific goals as defined in proposal are achieved
  - Actual observation times may differ from time estimates in proposal
- Quality Assurance (QA0 and QA1) is performed during observations

Observation

- Project Tracker gives PI status of project
  - Overall execution status
  - Detailed reports down to individual executions of SBs
- ALMA Status page gives information about
  - Current status of weather, array etc
  - Observing reports of finished observation blocks
  - Observing and configuration schedule for remaining part of cycle

Observation

Atacama Large Millimeter/submillimeter Array
In search of our Cosmic Origins

Search Site

ESO NRAO NAOJ

Log in | Register | Reset Password | Forgot Account

- About
- Science
- Proposing
- Observing
  - ToO activation
  - Phase 2
  - Project Tracker
  - ALMA Status Page
  - High Priority Projects
- Data
- Documents & Tools
- Knowledgebase/FAQ

User Services at ARCs

- Helpdesk
- ALMA Calendars
- EU ARC
- NA ARC
- EA ARC

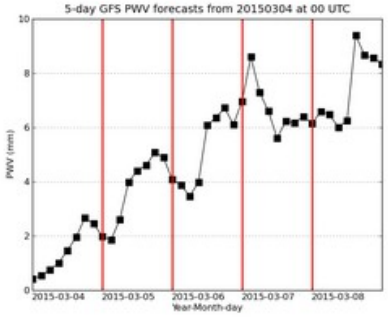
You are here: Home › Observing › ALMA Status Page

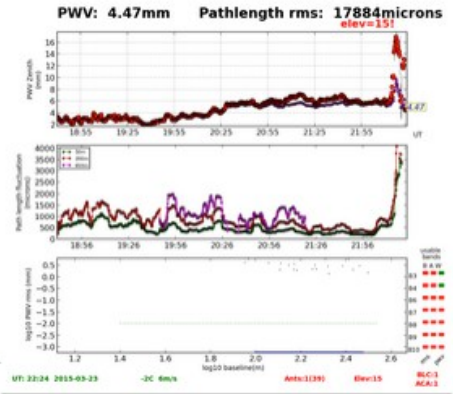
ALMA Status Page

Link to ALMA Publications List

Weather

Current Data		
Radiometer	[mm] :	Shutter Closed
Temperature	[C] :	-5.54
Dewpoint	[C] :	-5.5
Humidity	[%] :	95.09
Pressure	[hPa] :	553.29
Wind Speed	[m/s] :	8.95
Wind Direction	[deg] :	318.0
Wind Chill	[C] :	-18.48
Last update	:	Wed Mar 25 10:56:00 2015



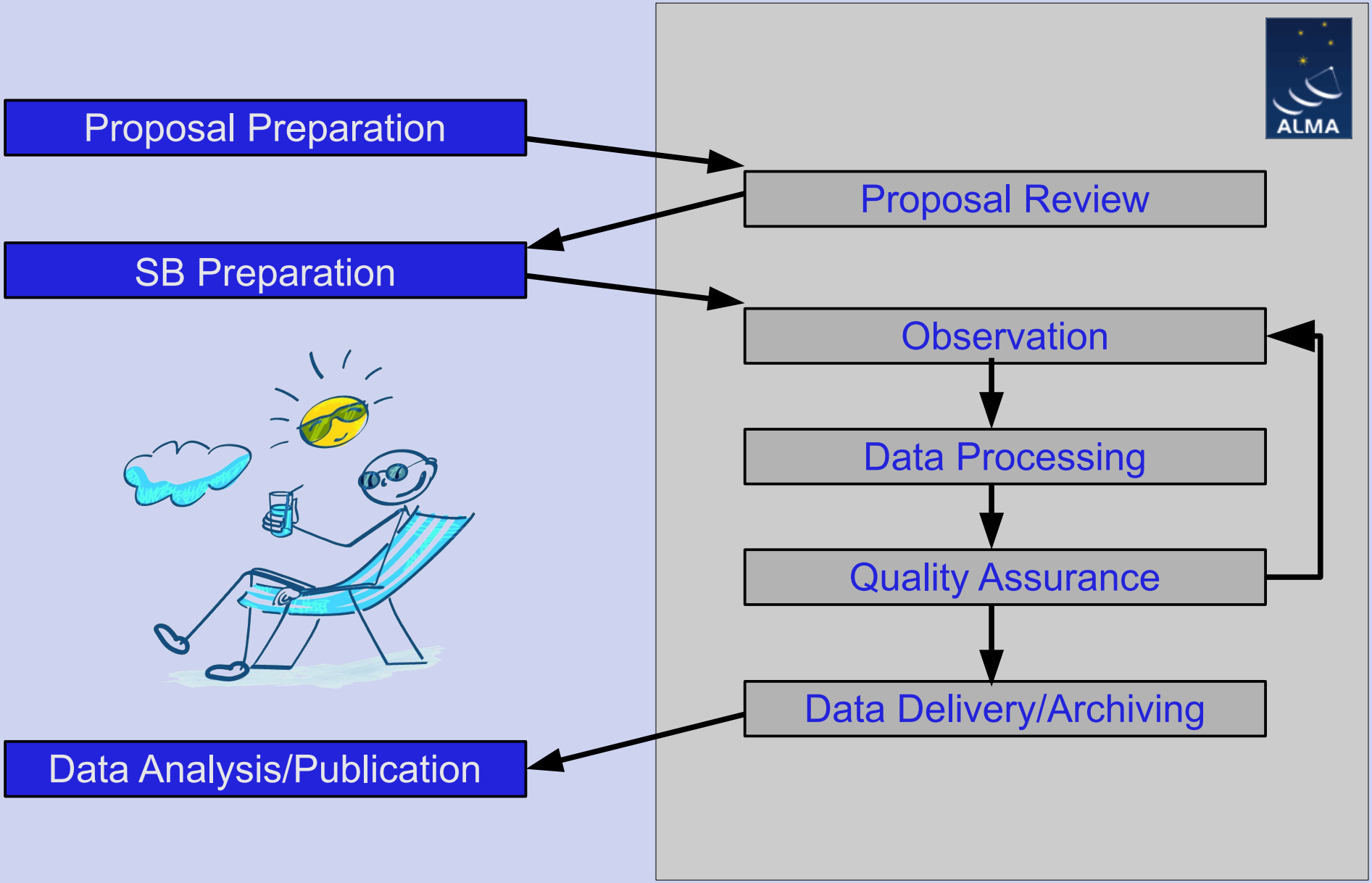


APEX Weather Monitor | Chajnantor PWV Forecast | Current ALMA PWV & phase stability

Most Recent ES Configuration (March 23, 2015)

Array	7m	12m

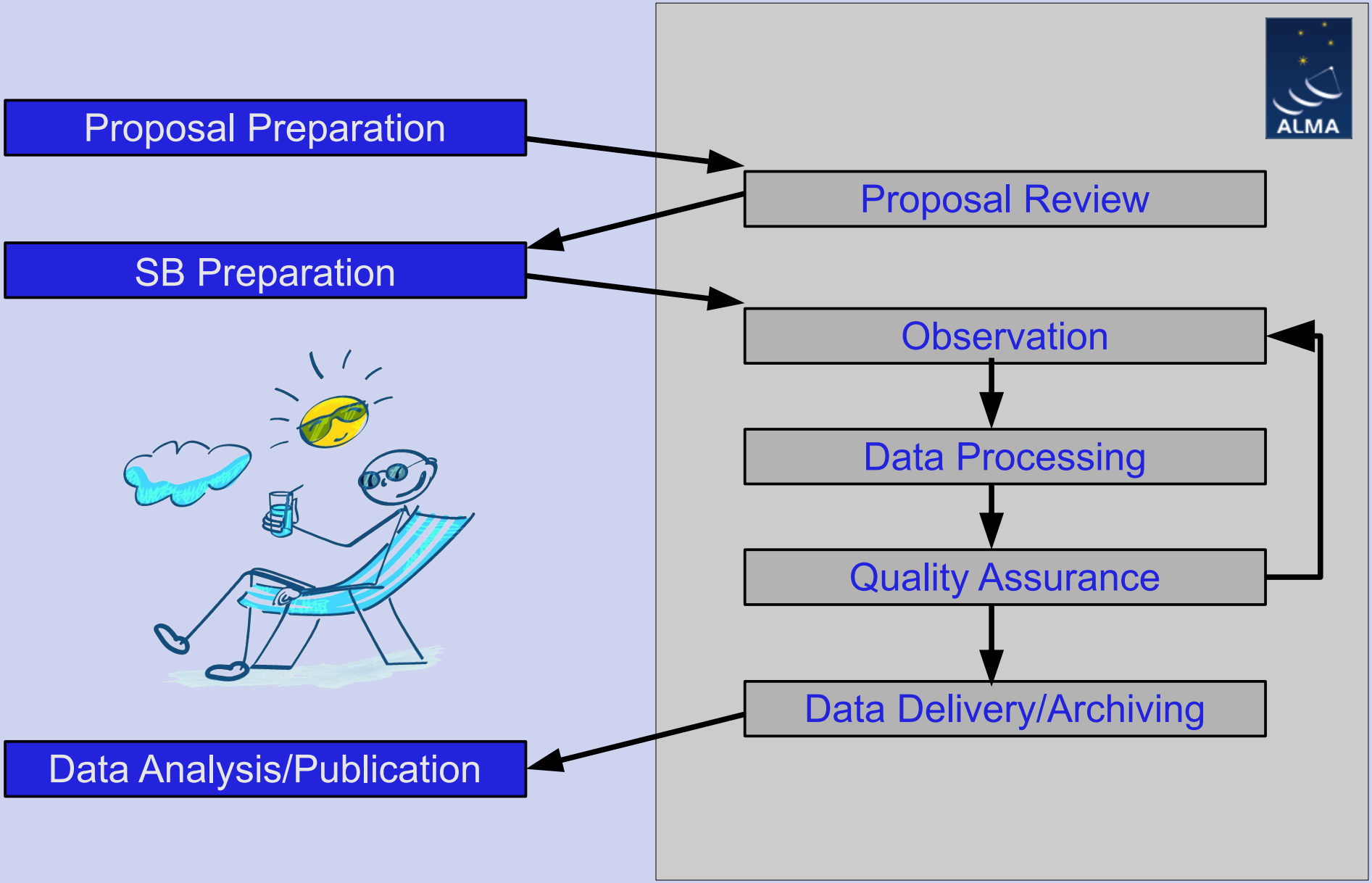
Data Processing



Data Processing

- Performed by ALMA with CASA
  - Standard modes: Pipeline
  - Non-standard modes: manual
  - On a Science Goal level
- Involves calibration, flagging, imaging
- Quality Assurance (QA2) performed

Quality Assurance



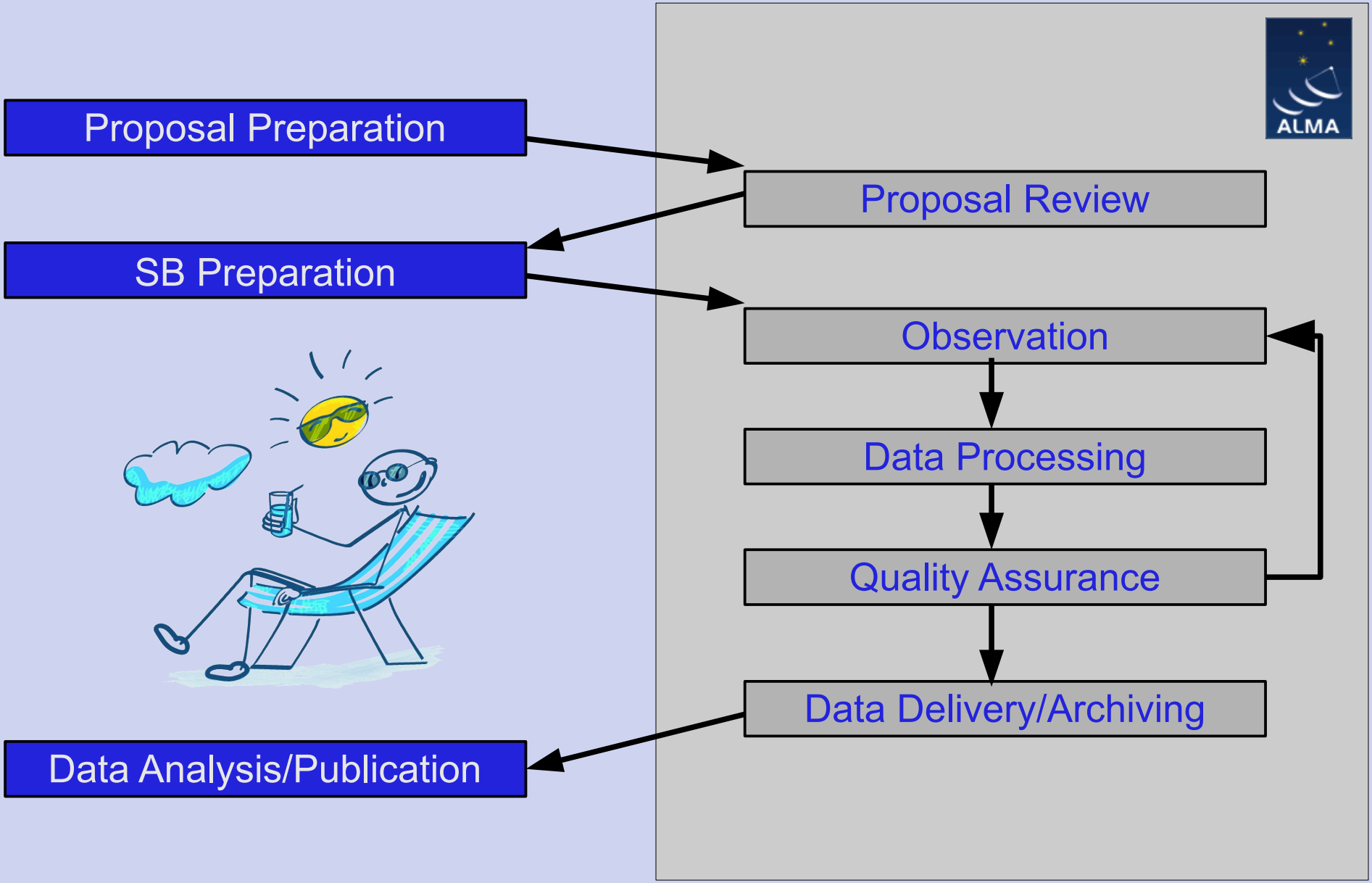
Quality Assurance

- Goal: “Deliver to the PI a reliable final data product that has reached the desired control parameters outlined in the science goals, that is calibrated to the desired accuracy and free of calibration and imaging artifacts”

Quality Assurance

- QA0 and QA1 during data taking
- QA2 during data processing
  - Failure to meet pass criteria leads automatically to re-observation of affected SBs
- QA3 after data delivery
  - Feedback from PI through helpdesk

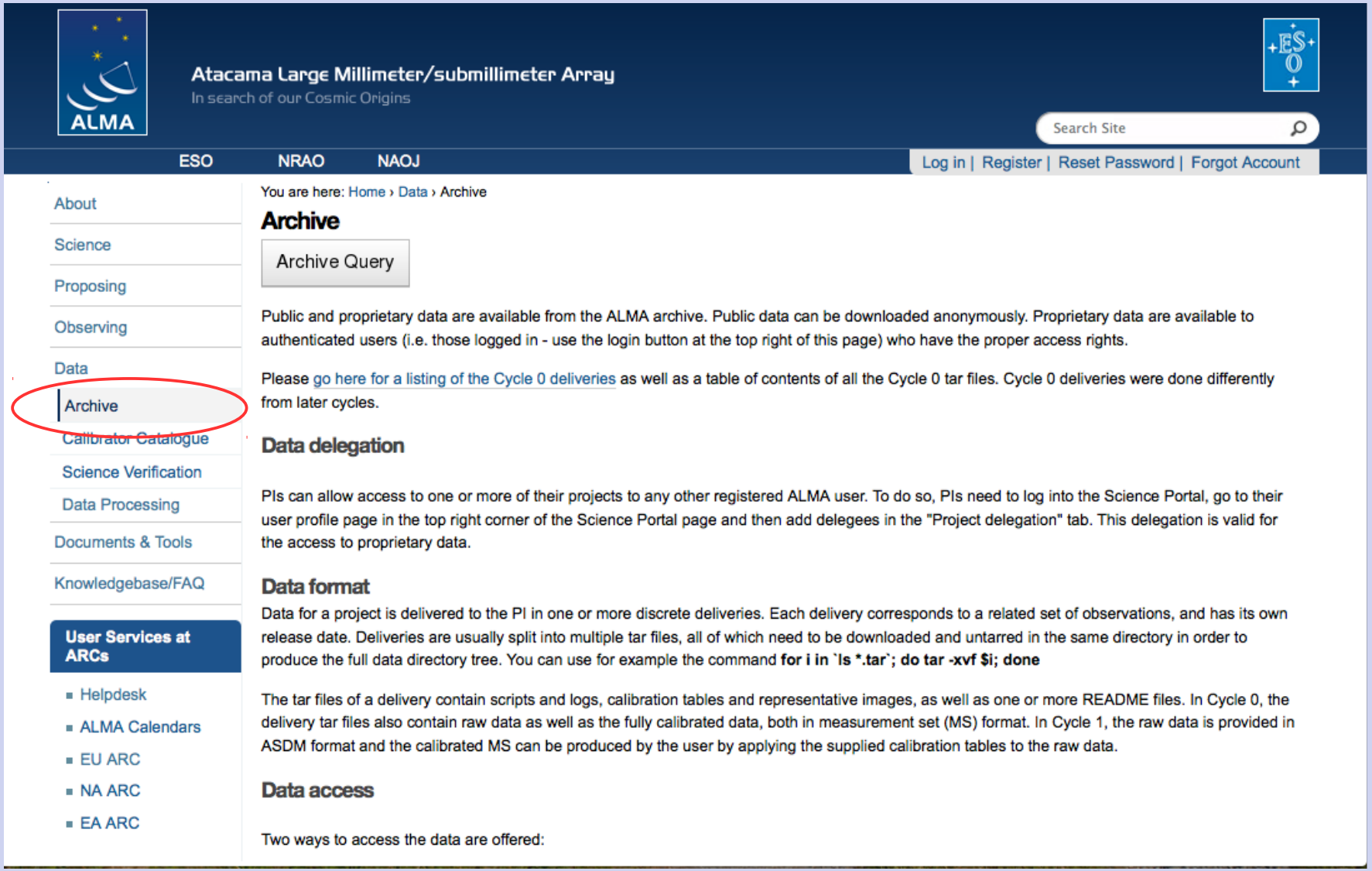
Data Delivery/Archiving



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 helpdesk that data is available for download
  - Shipping of disks in special cases

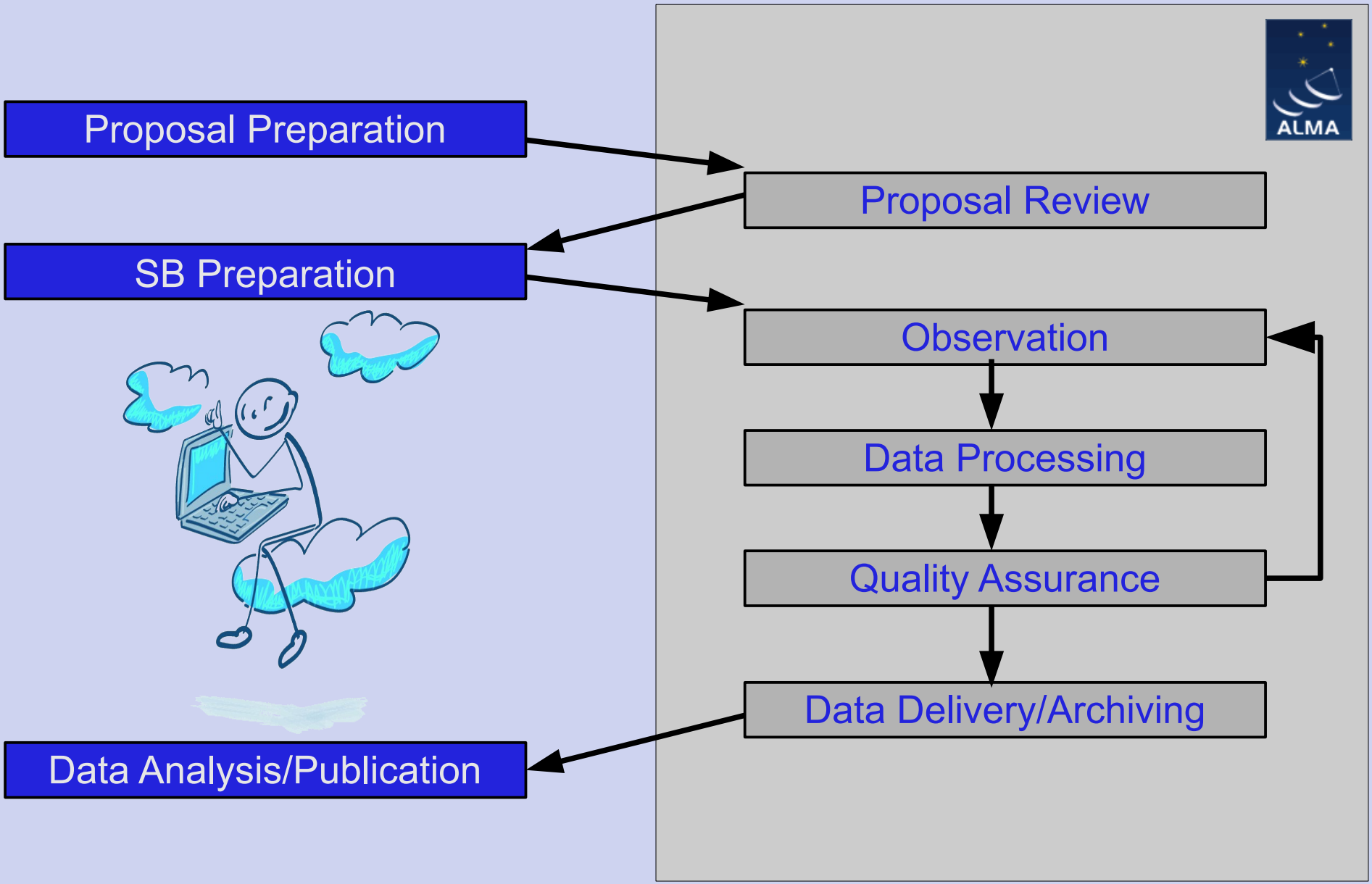
Data Delivery/Archiving



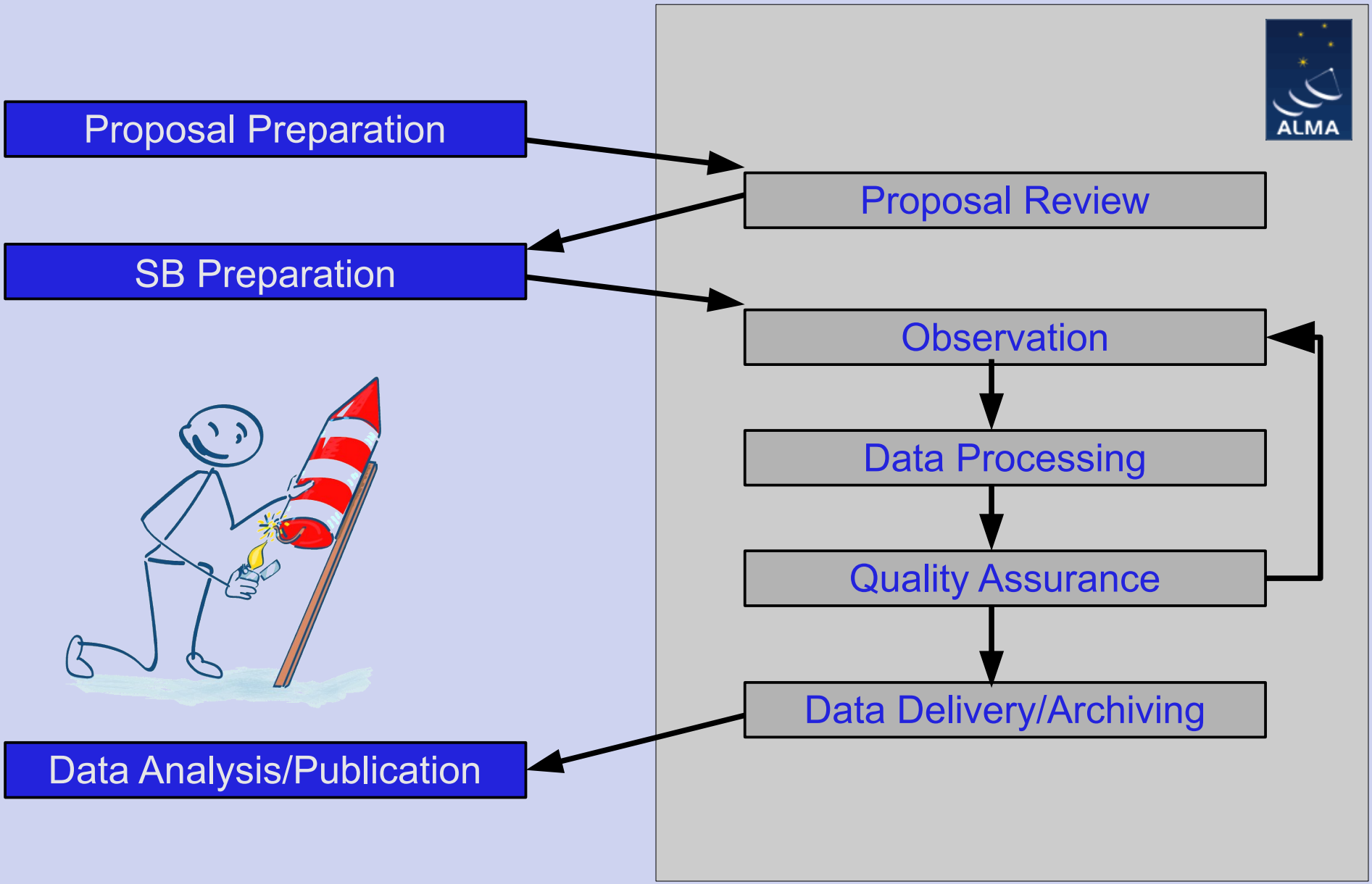
Data Delivery/Archiving

- Data package includes
  - Raw Data
  - Calibration & imaging products
  - Fits images & cubes
  - QA2 report
  - Data processing script
  - Processing log files
- Proprietary period 12 months
  - Clock starts when data available for download

From Proposal to Delivered Data



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 through ALMA helpdesk

Data Analysis/Publication