



What's inside the delivery package?

Kouichiro Nakanishi
(EA-ARC, NAOJ)





This presentation

- provides an outline about contents of the data package delivered to PI and available via the archive
 - They change from the previous cycles (Cycle 0-4) ones
- provides briefs about QA2 report in SnooPI (new in Cycle 5)
- focuses on Pipeline (PL) processed Interferometer data product





Acknowledgement

- This presentation makes use of a Cycle 5 delivery package which is by courtesy of Yamashita-san (Ehime Univ.). We sincerely thank his kind understanding.





Package: the archive

ALMA Request Handler

Kouichiro Nakanishi

[My Requests](#)

[Logout](#)

Kouichiro Nakanishi: Request #1169166993 ✓

Request Title: [Click to edit](#)

Download Selected

readme product raw raw (semipass)

Project / OUSet / Executionblock	File	Size	Accessible
Request 1169166993			
Project 2017.1.01158.S			
<input checked="" type="checkbox"/> readme	2017.1.01158.S.readme.txt		
Science Goal OUS uid://A001/X1284/X12de			
Group OUS uid://A001/X1284/X12df			
Member OUS uid://A001/X1284/X12e0			
SB 12376529 c 06 7M			
<input checked="" type="checkbox"/> product	2017.1.01158.S uid A001 X1284 X12e0 001 of 001.tar		
			Total: 530.7MB





Package: Inside (1)

```
2017.1.01158.S/  
├── science_goal.uid___A001_X1284_X12de  
│   ├── group.uid___A001_X1284_X12df  
│   │   └── member.uid___A001_X1284_X12e0  
│   │       ├── calibration  
│   │       ├── log  
│   │       ├── product  
│   │       ├── qa  
│   │       └── script
```

- **calibration**: calibration tables
- **log**: data reduction log files
- **product**: image products (FITS files)
- **qa**: PL weblog
- **script**: script files to restore PL calibration





Package: Inside (2-1)

```

member.uid__A001_X1284_X12e0/
├── member.uid__A001_X1284_X12e0.README.txt
├── calibration
│   ├── member.uid__A001_X1284_X12e0.hifa_calimage.auxproducts.tgz
│   ├── member.uid__A001_X1284_X12e0.session_1.auxcaltables.tgz
│   ├── member.uid__A001_X1284_X12e0.session_1.caltables.tgz
│   ├── uid__A002_Xc55c89_X244f.ms.calapply.txt
│   ├── uid__A002_Xc55c89_X244f.ms.flagversions.tgz
│   └── uid__A002_Xc55c89_X244f_target.ms.auxcalapply.txt
├── log
│   └── member.uid__A001_X1284_X12e0.log
├── qa
│   └── member.uid__A001_X1284_X12e0.qa
├── script
│   ├── member.uid__A001_X1284_X12e0.calimage.pipeline_manifest.xml
│   ├── member.uid__A001_X1284_X12e0.calimage.product_rename.txt
│   ├── member.uid__A001_X1284_X12e0.hifa_calimage.casa_piperestorescript.py
│   ├── member.uid__A001_X1284_X12e0.hifa_calimage.casa_pipescript.py
│   ├── member.uid__A001_X1284_X12e0.hifa_calimage.pprequest.xml
│   └── member.uid__A001_X1284_X12e0.scriptForPI.py

```

**Calibration tables and auxiliary files
(for restoring PL calibration)**





Package: Inside (2-2)

```

member.uid__A001_X1284_X12e0/
├── member.uid__A001_X1284_X12e0.README.txt
├── calibration
│   ├── member.uid__A001_X1284_X12e0.hifa_calimage.auxproducts.tgz
│   ├── member.uid__A001_X1284_X12e0.session_1.auxcaltables.tgz
│   ├── member.uid__A001_X1284_X12e0.session_1.caltables.tgz
│   ├── uid__A002_Xc55c89_X244f.ms.calapply.txt
│   ├── uid__A002_Xc55c89_X244f.ms.flgversions.tgz
│   └── uid__A002_Xc55c89_X244f_target.ms.auxcalapply.txt
├── log
│   └── member.uid__A001_X1284_X12e0.hifa_calimage.casa_commands.log
├── qa
│   └── member.uid__A001_X1284_X12e0.hifa_calimage.weblog.tgz
├── script
│   ├── member.uid__A001_X1284_X12e0.calimage.pipeline_manifest.xml
│   ├── member.uid__A001_X1284_X12e0.calimage.product_rename.txt
│   ├── member.uid__A001_X1284_X12e0.hifa_calimage.casa_piperestorescript.py
│   ├── member.uid__A001_X1284_X12e0.hifa_calimage.casa_pipescript.py
│   ├── member.uid__A001_X1284_X12e0.hifa_calimage.pprequest.xml
│   └── member.uid__A001_X1284_X12e0.scriptForPI.py

```

CASA commands run by PL

Weblog by PL





Package: weblog


[Home](#)
[By Topic](#)
[By Task](#)

2017.1.01158.S

Observation Overview

Project	uid://A001/X122c/X22f
Principal Investigator	takuji
OUS Status Entity id	uid://A001/X1284/X12e0
Observation Start	2017-10-05 05:26:32 UTC
Observation End	2017-10-05 05:50:02 UTC

Pipeline Summary

Pipeline Version	40896 (Pipeline-CASA51-P2-B) (documentation)
CASA Version	5.1.1-5 r40000
Pipeline Start	2017-11-20 08:07:42 UTC
Execution Duration	0:45:59

Observation Summary

Measurement Set	Receivers	Num Antennas	Time (UTC)			Baseline Length			Size
			Start	End	On Source	Min	Max	RMS	
Observing Unit Set Status: uid://A001/X1284/X12e0 Scheduling Block ID: uid://A001/X1284/X1223									
Session: session_1									
uid__A002_Xc55c89_X244f.ms	ALMA Band 6	11	2017-10-05 05:26:32	2017-10-05 05:50:01	0:05:02	8.9 m	48.9 m	27.9 m	732.5 MB
uid__A002_Xc55c89_X244f_target.ms	ALMA Band 6	11	2017-10-05 05:44:43	2017-10-05 05:44:43	0:05:02	8.9 m	48.9 m	27.9 m	141.7 MB





Package: Inside (2-3)

```

member.uid__A001_X1284_X12e0/
├── member.uid__A001_X1284_X12e0.README.txt
├── calibration
│   ├── member.uid__A001_X1284_X12e0.hifa_calimage.auxproducts.tgz
│   ├── member.uid__A001_X1284_X12e0.session_1.auxcaltables.tgz
│   ├── member.uid__A001_X1284_X12e0.session_1.caltables.tgz
│   ├── uid__A002_Xc55c89_X244f.ms.calapply.txt
│   ├── uid__A002_Xc55c89_X244f.ms.flagversions.tgz
│   └── uid__A002_Xc55c89_X244f_target.ms.auxcalapply.txt
├── log
│   ├── member.uid__A001_X1284_X12e0.hifa_calimage.casa_commands.log
│   └── member.uid__A001_X1284_X12e0.hifa_calimage.weblog.tgz
└── script
    ├── member.uid__A001_X1284_X12e0.calimage.pipeline_manifest.xml
    ├── member.uid__A001_X1284_X12e0.calimage.product_rename.txt
    ├── member.uid__A001_X1284_X12e0.hifa_calimage.casa_piperestorescript.py
    ├── member.uid__A001_X1284_X12e0.hifa_calimage.casa_pipescript.py
    ├── member.uid__A001_X1284_X12e0.hifa_calimage.pprequest.xml
    └── member.uid__A001_X1284_X12e0.scriptForPI.py
  
```

CASA scripts etc. for restoring PL calibration





Package: scriptForPI.py

```
# ALMA Data Reduction Script
# $Id: scriptForPI.py,v 1.23 2017/10/17 15:15:15 dpetry Exp $
```

```
# Calibration application
```

```
import os
import sys
import glob
from xml.etree import cElementTree as ET
```

The script for restoring PL calibration

```
applyonly = True
```

```
os.environ["LANG"] = "C"
```

```
print '*** ALMA scriptForPI ***'
casalog.origin('casa')
casalog.post('*** ALMA scriptForPI ***', 'INFO', 'scriptForPI')
casalog.post('$Id: scriptForPI.py,v 1.23 2017/10/17 15:15:15 dpetry Exp $', 'INFO', 'scriptForPI')
```

```
savingslevel=0
```

```
if globals().has_key("SPACESAVING"):
    print 'SPACESAVING =', SPACESAVING
    if (type(SPACESAVING)!=int or SPACESAVING<-1):
        sys.exit('ERROR: SPACESAVING value \''+str(SPACESAVING)+'\' not permitted, must be int>=-1.\n'
                + 'Valid values: 0 = no saving,\n'
                + '          1 = delete *.ms.split,\n'
                + '          2 = delete *.ms and *.ms.split,\n'
                + '          >=3 = delete *.ms, *.ms.split, and if possible *.ms.split.cal'
                + '          -1 = do not check disk space')
```

```
savingslevel = SPACESAVING
```





Package: Inside (3-1)

science target

```

product
|— member.uid__ A001_X1284_X12e0._1237652901832294517__sci.spw16_18_20_22.cont.I.mask.fits
|— member.uid__ A001_X1284_X12e0._1237652901832294517__sci.spw16_18_20_22.cont.I.pbcor.fits
|— member.uid__ A001_X1284_X12e0._1237652901832294517__sci.spw16_18_20_22.cont.I.pb.fits.gz
|— member.uid__ A001_X1284_X12e0._1237652901832294517__sci.spw16.cube.I.mask.fits
|— member.uid__ A001_X1284_X12e0._1237652901832294517__sci.spw16.cube.I.pbcor.fits
|— member.uid__ A001_X1284_X12e0._1237652901832294517__sci.spw16.cube.I.pb.fits.gz
|— member.uid__ A001_X1284_X12e0._1237652901832294517__sci.spw16.mfs.I.mask.fits
|— member.uid__ A001_X1284_X12e0._1237652901832294517__sci.spw16.mfs.I.pbcor.fits
|— member.uid__ A001_X1284_X12e0._1237652901832294517__sci.spw16.mfs.I.pb.fits.gz
|— member.uid__ A001_X1284_X12e0._1237652901832294517__sci.spw16.repBW.I.mask.fits
|— member.uid__ A001_X1284_X12e0._1237652901832294517__sci.spw16.repBW.I.pbcor.fits
|— member.uid__ A001_X1284_X12e0._1237652901832294517__sci.spw16.repBW.I.pb.fits.gz
|— ... (science target cubes and continuum image of other SPWs)
|— member.uid__ A001_X1284_X12e0.J0006-0623_bp.spw16.mfs.I.mask.fits
|— member.uid__ A001_X1284_X12e0.J0006-0623_bp.spw16.mfs.I.pbcor.fits
|— member.uid__ A001_X1284_X12e0.J0006-0623_bp.spw16.mfs.I.pb.fits.gz
|— ... (J0006-0623 continuum images of other SPWs)
|— member.uid__ A001_X1284_X12e0.J0141-0928_ph.spw16.mfs.I.mask.fits
|— member.uid__ A001_X1284_X12e0.J0141-0928_ph.spw16.mfs.I.pbcor.fits
|— member.uid__ A001_X1284_X12e0.J0141-0928_ph.spw16.mfs.I.pb.fits.gz
|— ... (J0141-0928 continuum images of other SPWs)

```





Package: Inside (3-2)

science target

```

product
├── member.uid A001_X1284_X12e0_1237652901832294517__sci.spw16_18_20_22.cont.I.mask.fits
├── member.uid A001_X1284_X12e0_1237652901832294517__sci.spw16_18_20_22.cont.I.pbcor.fits
├── member.uid A001_X1284_X12e0_1237652901832294517__sci.spw16_18_20_22.cont.I.pb.fits.gz
├── member.uid A001_X1284_X12e0_1237652901832294517__sci.spw16.cube.I.mask.fits
├── member.uid A001_X1284_X12e0_1237652901832294517__sci.spw16.cube.I.pbcor.fits
├── member.uid A001_X1284_X12e0_1237652901832294517__sci.spw16.cube.I.pb.fits.gz
├── member.uid A001_X1284_X12e0_1237652901832294517__sci.spw16.mfs.I.mask.fits
├── member.uid A001_X1284_X12e0_1237652901832294517__sci.spw16.mfs.I.pbcor.fits
├── member.uid A001_X1284_X12e0_1237652901832294517__sci.spw16.mfs.I.pb.fits.gz
├── member.uid A001_X1284_X12e0_1237652901832294517__sci.spw16.repBW.I.mask.fits
├── member.uid A001_X1284_X12e0_1237652901832294517__sci.spw16.repBW.I.pbcor.fits
├── member.uid A001_X1284_X12e0_1237652901832294517__sci.spw16.repBW.I.pb.fits.gz
├── ... (science target cubes and continuum image of other SPWs)
├── member.uid A001_X1284_X12e0_J0006-0623_bp.spw16.mfs.I.mask.fits
├── member.uid A001_X1284_X12e0_J0006-0623_bp.spw16.mfs.I.pbcor.fits
├── member.uid A001_X1284_X12e0_J0006-0623_bp.spw16.mfs.I.pb.fits.gz
├── ... (J0006-0623 continuum images of other SPWs)
├── member.uid A001_X1284_X12e0_J0141-0928_ph.spw16.mfs.I.mask.fits
├── member.uid A001_X1284_X12e0_J0141-0928_ph.spw16.mfs.I.pbcor.fits
├── member.uid A001_X1284_X12e0_J0141-0928_ph.spw16.mfs.I.pb.fits.gz
├── ... (J0141-0928 continuum images of other SPWs)

```

continuum (all the SPWs)

line (cube)

continuum (per SPW)

line (cube, user request BW)

Bandpass cal. (continuum)

Phase cal. (continuum)





Weblog: calibrator images

Home
By Topic
By Task

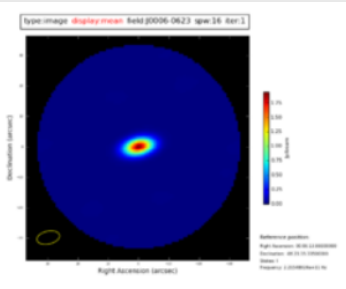
2017.1.01158.S

- 16. hifa_timegaincal
- 17. hif_applycal
- 18. hifa_imageprecheck
- 19. hif_makeimlist
- 20. hif_makeimages
- 21. hif_checkproductsize
- 22. hifa_exportdata
- 23. hif_mstransform
- 24. hifa_flagtargets
- 25. hif_makeimlist
- 26. hif_findcont
- 27. hif_uvcontfit
- 28. hif_uvcontsub
- 29. hif_makeimages
- 30. hif_makeimlist
- 31. hif_makeimages
- 32. hif_makeimlist
- 33. hif_makeimages
- 34. hif_makeimlist
- 35. hif_makeimages

20. Tclean/MakeImages

Make calibrator images BACK

Image Details

Field	Spw	Pol	Image details	Image result
J0006-0623 (BANDPASS)	16	I	<p>centre frequency of image 221.5480GHz (LSRK)</p> <p>beam 7.69 x 4.22 arcsec</p> <p>beam p.a. -77.6deg</p> <p>final theoretical sensitivity 0.00051 Jy/beam</p> <p>cleaning threshold 0.019 Jy/beam Dirty DR: 3.8e+03 DR correction: 19</p> <p>clean residual peak / scaled MAD 12.94</p> <p>non-pbcor image RMS 0.0020 Jy/beam</p> <p>pbcor image max / min 1.94 / -0.00934 Jy/beam</p>	<div style="border: 1px solid gray; padding: 5px;">  <p style="font-size: small; margin-top: 5px;">Antenna position Right Ascension (J2000) Declination (J2000) Frequency (GHz)</p> </div> <p style="margin-top: 5px;">View other QA images...</p>





QA2 report

- provides summary of the data (beam size, noise level) and comments by data reducer
 - QA2 report replaces Cycle 0-4 README
- at the moment (Dec. 2017), one can access QA2 report solely via SnooPI
 - QA2 report will be available as a part of data package via the archive in the near future





SnooPI: Science Portal



<https://almascience.nao.ac.jp/observing/snoopi>

ALMA

Log in

About Science Proposing **Observing** Data Processing Tools Documentation Help

Search Site

SnooPI

The Snooping Project Interface (SnooPI) is available through the application and [here](#).

SnooPI

Phase 2

ToO activation

ALMA Status Page

Configuration Schedule

SnooPI

High Priority Projects

Bug fixes and new features of the June 2017 release:

- SB and MOUS history added.
- Time and visit constraints added at the SB details level.

Older updates:

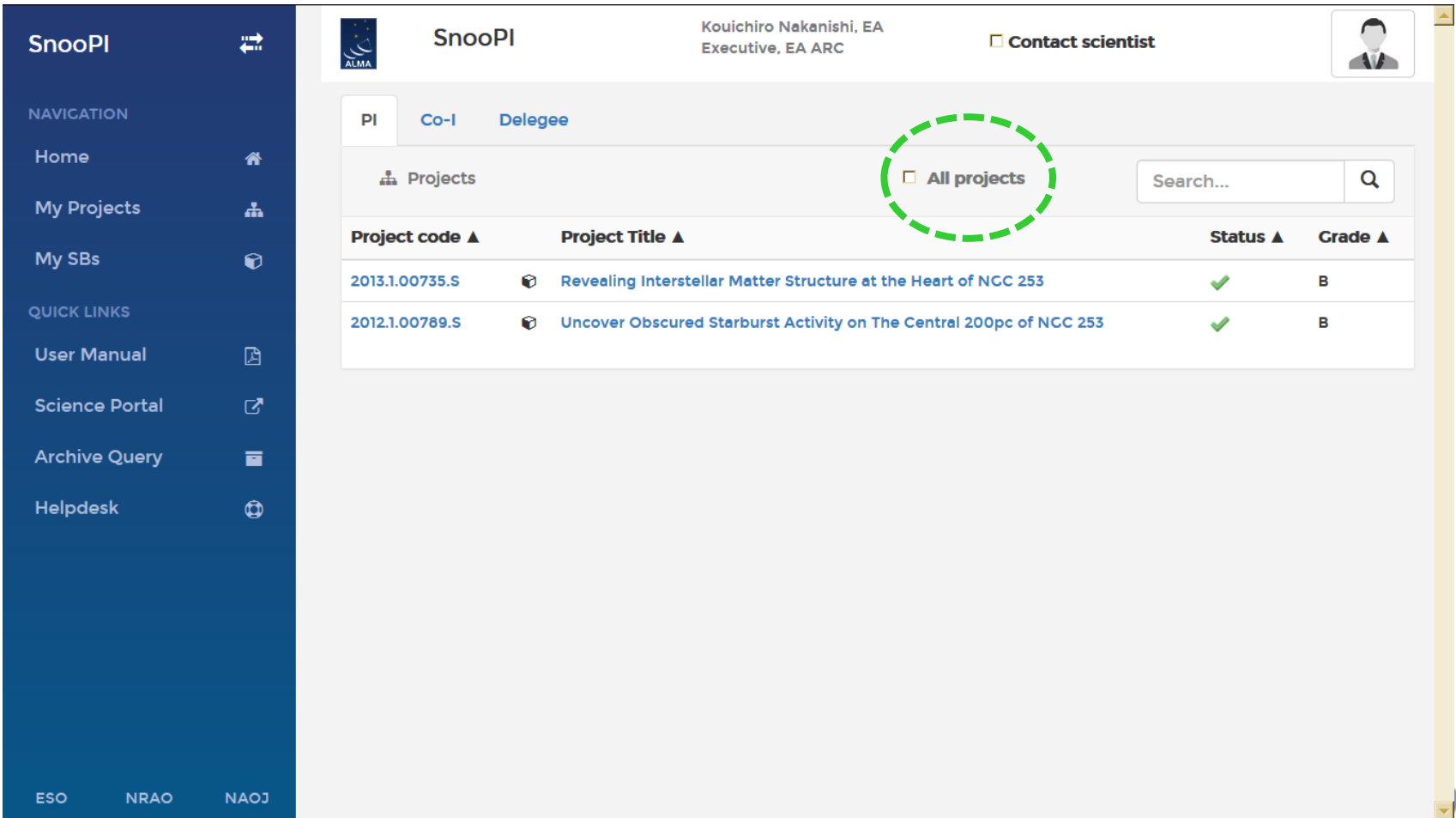
May 2017:

- Loading projects, SBs and detailed EB view is now faster.

Site Map Accessibility Contact Privacy Statement ESO NRAO NAOJ

<https://almascience.nao.ac.jp/observing/snoopi>

SnooPI: PI projects



The screenshot shows the SnooPI web interface. On the left is a dark blue navigation sidebar with the following items:

- SnooPI
- NAVIGATION
 - Home
 - My Projects
 - My SBs
- QUICK LINKS
 - User Manual
 - Science Portal
 - Archive Query
 - Helpdesk
- At the bottom: ESO, NRAO, NAOJ

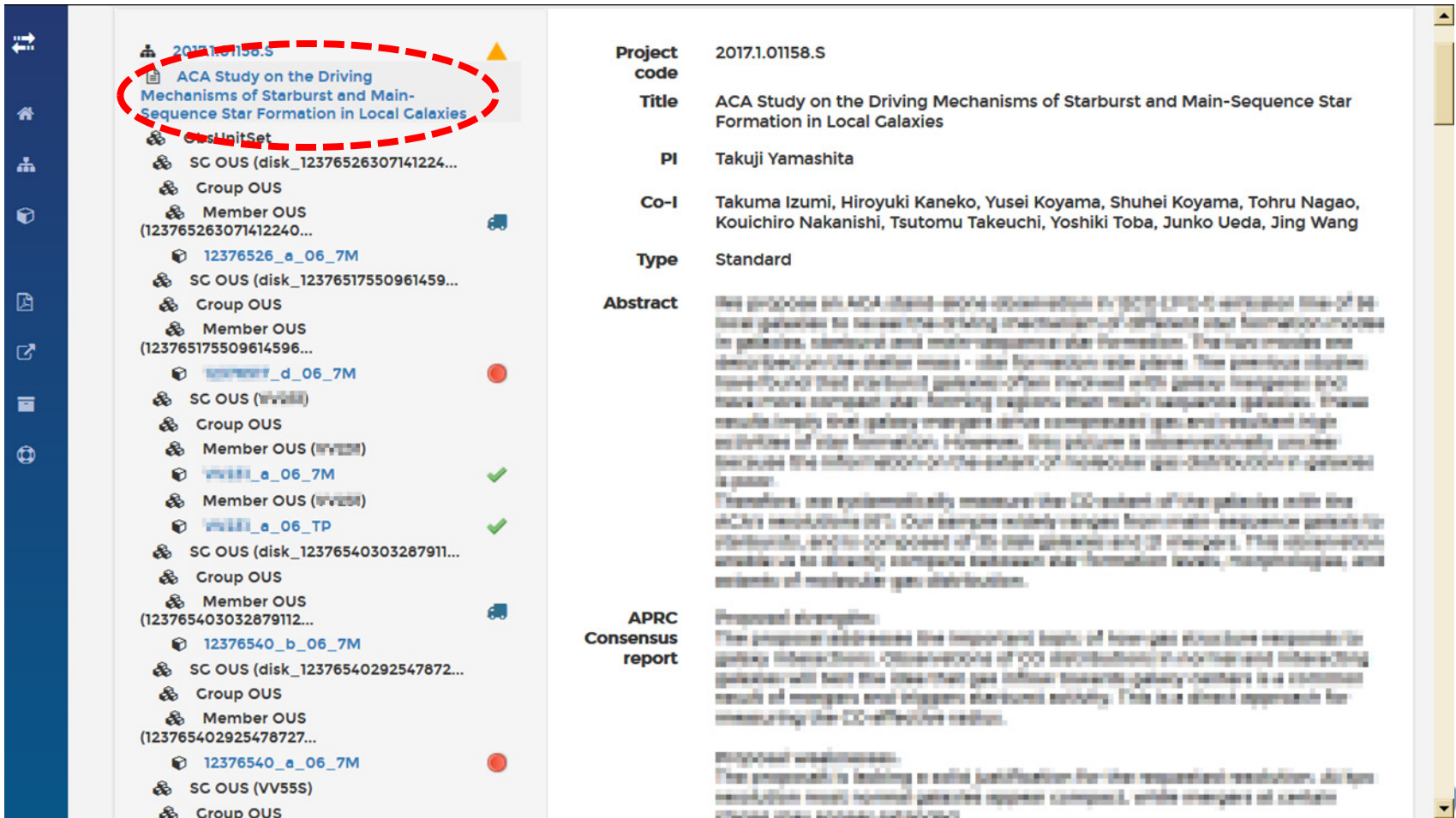
The main content area is titled 'SnooPI' and shows the user 'Kouichiro Nakanishi, EA Executive, EA ARC' with a 'Contact scientist' button. Below this are tabs for 'PI', 'Co-I', and 'Delegee'. A 'Projects' section contains a search bar and a button labeled 'All projects', which is circled in green. Below the search bar is a table of projects:

Project code ▲	Project Title ▲	Status ▲	Grade ▲
2013.1.00735.S	Revealing Interstellar Matter Structure at the Heart of NGC 253	✓	B
2012.1.00789.S	Uncover Obscured Starburst Activity on The Central 200pc of NGC 253	✓	B

SnooPI: project (tree view)

Tree Item	Status Icon	Execution Count
2017.1.01158.S	▲	Executions
ACA Study on the Driving Mechanisms of Starburst and Main-Sequence Star Formation in Local Galaxies		
ObsUnitSet		
SC OUS (disk_1237652630714122400)		
Group OUS		
Member OUS (1237652630714122400)	← SB	
12376526_a_06_7M		
SC OUS (disk_1237652630714122400)	← Status	1/1
Group OUS		
Member OUS (1237652630714122400)		
12376526_d_06_7M	●	0/1 ← Execution count
SC OUS (1237652630714122400)		
Group OUS		
Member OUS (1237652630714122400)	✓	1/1
12376526_a_06_7M		
Member OUS (1237652630714122400)	✓	1/1
12376526_a_06_TP		
SC OUS (disk_1237654030328791126)		
Group OUS		
Member OUS (1237654030328791126)	← Status	
12376540_b_06_7M		1/1
SC OUS (disk_1237654030328791126)		
Group OUS		
Member OUS (1237654030328791126)		
12376540_a_06_7M	●	0/1
SC OUS (1237654030328791126)		
Group OUS		
Member OUS (1237654030328791126)		
12376540_a_06_7M	●	0/1
SC OUS (disk_1237654030328791126)		
Group OUS		

SnooPI: Project overview



Project code	2017.1.01158.5
Title	ACA Study on the Driving Mechanisms of Starburst and Main-Sequence Star Formation in Local Galaxies
PI	Takuji Yamashita
Co-PI	Takuma Izumi, Hiroyuki Kaneko, Yusei Koyama, Shuhei Koyama, Tohru Nagao, Kouichiro Nakanishi, Tsutomu Takeuchi, Yoshiki Toba, Junko Ueda, Jing Wang
Type	Standard
Abstract	<p>We propose an ACA stand-alone observation in JCRT-LFPI to address one of the key questions in understanding the driving mechanisms of different star formation modes in galaxies, starburst and main-sequence star formation. The two modes are described on the stellar mass - star formation rate plane. The previous studies have found that starburst galaxies often evolved with galaxy mergers and therefore contain star-forming regions that main sequence galaxies. These results imply that galaxy mergers drive compressed gas and resulted high activities of star formation. However, this picture is observationally unclear because the information on the extent of molecular gas distribution in galaxies is poor.</p> <p>Therefore, we systematically measure the CO content of the galaxies with the ACA's resolution (7"). Our sample widely ranges from main sequence galaxies to starbursts, and is composed of 25 star galaxies and 2 mergers. The observation enables to directly compare between star formation levels, morphologies, and extents of molecular gas distribution.</p>
APRC Consensus report	<p>Proposed strategy: The proposal addresses the important issue of how gas structure responds to galaxy interactions. Observations of CO distribution in normal and interacting galaxies will test the idea that gas inflow towards galaxy centers is a common result of mergers and triggers starburst activity. This is a direct approach for measuring the CO-effective radius.</p> <p>Proposed weaknesses: The proposal is lacking a solid justification for the requested resolution. At this resolution most normal galaxies appear compact, while mergers of certain masses may appear resolved.</p>





QA2 report: Instructions

Instructions

INSTRUCTIONS OVERVIEW

Introduction
 Total Power Data
 Pipeline-calibrated TP data
 Manually calibrated TP data
 Primary Beam Correction
 How to restore the calibrated MeasurementSet for your data

#####

INTRODUCTION

This file describes the content of the tar file you have received. The full data structure is inserted below.

At this stage, we are releasing data after completion of one SB (excuted multiple times if required), so you will find only one member_ouss_id directory. This directory contains this README file and the following directories: calibration, script, qa2, log, product.

- 'calibration' contains the files needed for calibration starting from the initial ms to the fully calibrated data.
- 'script' contains the reduction scripts used to process the initial ms to calibrated data, but also to obtain concatenated data (if more than one execution) and imaging products. There are usually several scripts dealing with different parts of the processing.
 In case the calibration was done by the automated pipeline, you will also see the Pipeline Processing Request File (PPR).
 The most important script for you is the "scriptForPI.py". See the section "How to restore the calibrated MeasurementSet (MS) for your data" further below. (Note: the ALMA archive may prepend the script name with the MOUS UID.)
- 'product' contains the fits files of the selected image products.





Further information

- ALMA Science (CASA) Pipeline
<https://almascience.nao.ac.jp/processing/science-pipeline>
- SnooPI
<https://almascience.nao.ac.jp/observing/snoopi>
- QA2 data products (obsolete)
<https://almascience.nao.ac.jp/processing/qa2-data-products>

