



CSA Perspective

JSTUC Meeting #9
STSci, 14-06-2021

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Programmatic activities at CSA

- Extension of science support contract with science team (U de Montréal) for new launch date (done).
- Approval for continuation for mirror archive funding (Canadian Astronomy Data Center) (done but IMOOU must be renewed).
- OPS-JPIP nearly done (targeting signature this summer).
- Extension for Memorandum of Understanding (MOU) with the National Research Council (NRC) (funding of CSA scientists at STScI) done (now working on extension for operations phase).
- CSA AO for Cycle 1 grant funding done (should be published today!).
- Ongoing preparation for Phase E approval (next summer, including science & engineering support and grant funding beyond cycle 1).
- CSA to participate to joint launch event with NASA and ESA.

Science activities

- Science team coordination (monthly meeting, planning for GTO projects).
- Community engagement plan in development.
- JWST Town Hall meeting during CASCA 2021 annual conference.
- Development of software tools for NIRISS SOSS and AMI modes (image simulator, spectral trace/closure phase extraction, light curve analysis).
- Publications about the FGS and NIRISS in preparation for the general community (modes descriptions, simulations).
 - One publication for each mode, SOSS, AMI, WFSS, one NIRISS overview, and one FGS overview.
- Commissioning support with participation to mini-rehearsals and several recurrent meetings (Honeywell, CSA & U de Montréal staff scientists).

Cycle 1 activities: CSA grants

- Announcement of Opportunity (AO) for CSA JWST grants opportunity made **today** with a July 23, 2021 deadline.
- Two categories:
 - A: PI and Co-PI
 - B: Co-Is
- Evaluation during late summer (somewhat similar to STScI financial review).
- Goal to start funding projects by the end of current fiscal year (before end of March, 2022).

JWST Canadian mirror archive

- CSA is funding CADC to establish a JWST mirror archive in Canada.
 - The Canadian mirror has been tested and is ready to receive data.
- A JWST Science Platform on CANFAR cloud infrastructure allows JWST users to process and analyze datasets with Jupyter notebooks and visualization tools.
 - The platform is operational and in use by a limited group prior to rollout to the full community.

/ notebooks /	
Name	Last Modified
bcg_subtraction_iter0-Copy1.ipynb	7 days ago
bcg_subtraction_shared_psfsub.ipynb	7 days ago
bcgpy.py	15 days ago
canucnirissimagepipeline.ipynb	3 minutes ago
dolmsubtest.ipynb	15 minutes ago
Drizzle-canuc.ipynb	18 minutes ago
flagearlycr.py	2 months ago
imagefoverf.py	2 months ago
lst.lst	10 minutes ago
Makingmodelgalaxies.ipynb	5 days ago
testpsf.fits	a month ago
testpsfsub.ipynb	7 days ago

canucnirissimagepipeline

Code

```

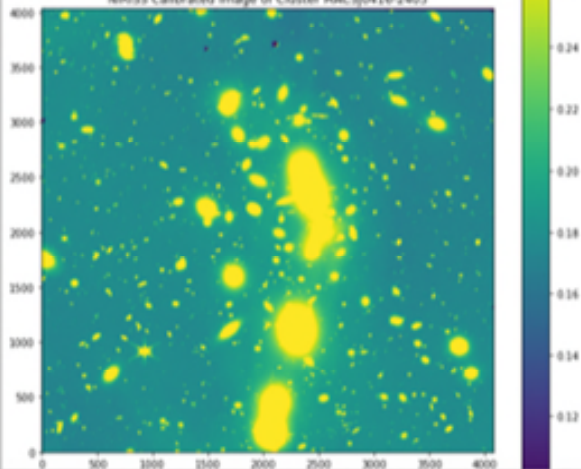
#Make association file based on level 2 images
prodname = 'demo_NIRISS_{}_image'.format(filters[1])
filesforasn = os.path.join(filterin2dir, 'scal_loverf.fits')
print (filesforasn)
asnfile = os.path.join(filterin3dir, 'direct_asn_{}.json'.format(filters[1]))
osasn = 'asn_from_list -o {} --product-name {} {}'.format(asnfile, prodname, filesforasn)
osasncall = subprocess.check_call(osasn, shell=True)

#Run JNTF pipeline level 3 processing
pipe = Image3Pipeline()
pipe.twahreg.skip = True
pipe.skymatch.skip = True
pipe.outlier_detection.pixfrac = 0.7
pipe.outlier_detection.kernel = 'square'
pipe.outlier_detection.snr = '4.0 3.0'
pipe.outlier_detection.scale = '0.5 0.4'
pipe.outlier_detection.backg = 0.0
pipe.outlier_detection.good_bits = '~00_NOT_USE'
pipe.resample.pixel_scale_ratio = 0.5
pipe.resample.pixfrac = 0.5
pipe.save_results = True
pipe.output_dir = filterin3dir
result = pipe(asnfile)

```

Output View

NIRISS Calibrated image of Cluster MACSJ0416-2403



Support during mission

- Working on approval of Phase E plan (now targeting approval in Fall 2021).
- Plan is
 - To maintain CSA-funded astronomers at STScI during mission (will explore other funding mechanisms)
 - To maintain engineering support through a contract agreement with Honeywell
 - To continue supporting the Canadian science team to maximize science return of JWST
 - To establish a JWST grants program for the duration of the mission



Thank you!

Canadian Space Agency



Agence spatiale canadienne