

Report from event supported by RadioNet

TITLE ADASS 2019

DATE: 06-10-2019 to 10-10-2019

LOCATION: Groningen, the Netherlands

MEETING WEBPAGE: https://www.adass2019.nl

HOST INSTITUTE: The organization of the conference is lead by ASTRON, but involves 8 Dutch in-

stitutes:

1. ASTRON (Netherlands Institute for Radioastronomy)

2. JIVE – Joint Institute for VLBI ERIC

3. ALMA ARC Leiden - ALMA Regional Center | Allegro

4. RUG - University of Groningen

5. Leiden University

6. RU - University of Nijmegen

7. UvA – University of Amsterdam

8. SRON (Netherlands Institute for Space Research)

RADIONET ASTRON/02

BENEFICIARY / NO:



Report:

1 SCIENTIFIC SUMMARY

The Astronomical Data Analysis Software and Systems (ADASS) conference is the premier conference for the exchange of information about astronomical software, and it is organized each year by a different hosting astronomical institution, at a different location. The conference provides a forum for astronomers, software engineers, and data specialists from around the world to discuss software and algorithms as used in all aspects of astronomy, from telescope operations, to data reduction, to outreach and education. In addition to presenting their work, delegates engage in discussions on emerging technologies and debate future directions in areas such as common data formats, software reuse and data dissemination. As such, ADASS is a vital mechanism to foster discussion for the advancement of the field.

The ADASS XXIX was organised in Groningen from 6 to 10 October 2019. It was a success with 354 registered participants. The first day of the conference consisted of four tutorials given in two parallel sessions. The contibutions were submitted and presented in plenary sessions as part of the following themes:

Theme	Number of Orals	Number of Posters
Multi-wavelength astronomy	3	11
Open data access/provisioning	3	17
Data science challenges: tools from statistics to machine learning	4	18
Data visualisation from line plots to augmented & virtual reality	5	9
Delivering accessible and science-ready radio data	2	6
Local and global cloud infrastructure for processing and storage	3	6
Data discovery across heterogeneous datasets	2	11
Telescope operations and scheduling: from classical to autonomous	6	1
Evolution of software development and management	6	19
Data processing pipelines	4	53
Other	2	15

In total, 12 demo booths were present at the conference, covering a variety of topics and institutions. On top of this 9 "Birds of a Feather" discussions took place. These are discussion sessions on specific relevant topics. Because of the popularity of this type of contribution, those were held in three parallel sessions from 7 to 10 October. Another discussion was held in the plenary theatre on the future of the proceedings on 10 October.

Connected to the event, a hackathon was organised which involved top-tier local high-school students. Those students were introduced to the community, and therefore the RadioNet instruments by visiting the conference. The winning team was awarded on-stage.



1.1 RADIONET IMPACT

ADASS XXIX significantly contributes to the growth of all RadioNet facilities towards next generation astronomical research and techniques. It engaged both astronomers and developers in a very constructive dialogue which will eventually enable an improved science exploitation of many observatories. The participation from the RadioNet user community (radio astronomy) was significant, resulting from the strong role ASTRON had in the local and programme organising committees and also shown by the fact that both RadioNet and the SKA were main sponsors of the event. Moreover, it is expected that through this conference the number of users of various RadioNet facilities will grow, as attendees that are not yet engaged with these instruments, now have been given an extensive overview of the capabilities and incredible potential of their data, such as those produced by LOFAR, EVN, and ALTA/APERTIF.

The meeting provided an important forum for networking within the world-wide astronomical software community. Also, the meeting was followed by a tour of the two RadioNET facilities LOFAR and WSRT/APERTIF which was attended by 123 participants.

2 AGENDA OF THE EVENT

The full program is attached and can be found here: https://www.adass2019.nl/conference-info/program/





Figure 1 Left: ASTRON director Carole Jackson showing the WSRT. Right: Chair of the Local Organisation Committee (LOC) Roberto Pizzo presenting the members of the LOC. Credits: J. de Plaa, SRON.



3 PARTICIPANTS

There were 354 registered participants. 32 (9%) registered as student. The gender distribution is shown in the table below.

Gender	Number	Percentage
Female	70	20%
Male	255	72%
Other	2	0.6%
Prefer not to disclose	27	8%

Participants from all over the world attended. An overview of the countries of origin of our participants is shown below.

Country	Number of Participants
Netherlands	87
United States of America	76
Germany	32
France	29
United Kingdom	22
Spain	18
China	17
Australia	15
Italy	14
South Africa	7
Japan	6
Chile	5
Canada	4
Turkey	4
Switzerland	4
Russia	3
Czechia	2
Austria	2
Korea (the Republic of)	2
Taiwan	2
Mexico	1
India	1
Kenya	1

There were 10 invited speakers of which 3 were female, 5 male and 2 did not disclose. The attendance list, including name, affiliation and country, and signed by the participants, is attached.





Figure 2 Conference group photo. Credits: J.de Plaa, SRON.



Figure 3 Telescope tour group photo. Credits: ASTRON.







Figure 4 Left: Jan David Mol (ASTRON) explaining LOFAR to some of the hackathon participants. Right: The IAU Inspiring Starts booth on inclusion in astronomy. Credits: J. de Plaa, SRON.

3.1 RADIONET NEWSLETTER

6 participants subscribed to the RadioNet Newsletter.

4 RADIONET FINANCIAL CONTRIBUTION

The financial contribution from RadioNet of 7000€ was used to pay part of the local organisation costs of the event.

5 Publications

A book of proceedings will be published by the Astronomical Society of the Pacific. To date, 182 articles have been submitted for inclusion in the ADASS XXIX proceedings. We confirm that we will acknowledge the RadioNet support with the acknowledgement sentence and logos of RadioNet & EC in the proceedings book.

6 CONFIRMATION

The organizers confirm that RadioNet is allowed to publish this report, including the list of participants, statistical details, pictures, etc.



ADASS2019, October 6-10, Groningen, the Netherlands

CONFERENCE INFO

GALLERIES V

LOGISTICS V

REGISTER ~

INSTRUCTIONS ~

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EVENTS V IVOA V CONTACT

Conference Programme

Sunday 6th of October 2019

12:00 - 13:00

Tutorials check-in/Registration (Martini Plaza: registration desk in main entrance hall)

13:00 - 17:30

Coffee Break

Demo booth/Poster setup

Tutorial Session 1	Tutorial Session 2
Start Time: 13:00 Room: 10 & 11a	Start Time: 13:00 Room: 11b & 12
13:00 - 15:00	13:00 - 15:00
Francesco Pierfederici —	Kai Lars Polsterer —
Ridiculously Advanced Python	Machine learning
14:30 - 15:30	
Tutorials check-in/Registration (Martini Plaza: registration	desk in main entrance hall)
15:00 - 15:30	

Tutorial Session 3	Tutorial Session 4
Start Time: 15:30 Room: 10 & 11a	Start Time: 15:30 Room: 13
15:30 - 17:30	15:30 - 17:30
Peter Williams —	Felix Stoehr —
Interactively exploring and visualizing data on the	DesignThinking
sky with Jupyter and pywwt	

Welcome Reception Start Time: 19:00 19:00 - 21:00 Welcome reception (Academiegebouw, Broerstraat 5, Groningen) Monday 7th of October 2019 07:45 - 08:45 Registration 08:45 - 09:00 Welcome address by Prof. Carole Jackson (General and Scientific Director - ASTRON) Session 1. Data discovery across heterogeneous datasets Start Time: 09:00 | Room: Plenary Theatre | Chair: Xiuqin Wu 09:00 - 09:30 Invited talk (I1.1) Joseph Mazzarella -Science Discovery with Diverse Multi-wavelength Datasets Fused in NED 四 09:30 - 09:45 Oral Contribution (01.2) Mauricio Araya -Content-aware Data Discovery on VO Catalogs Using Succinct Representations 囚 09:45 - 10:00 Oral Contribution (01.3)

A Science discovery portal for EUCLID data: The EUCLID scientific archive system

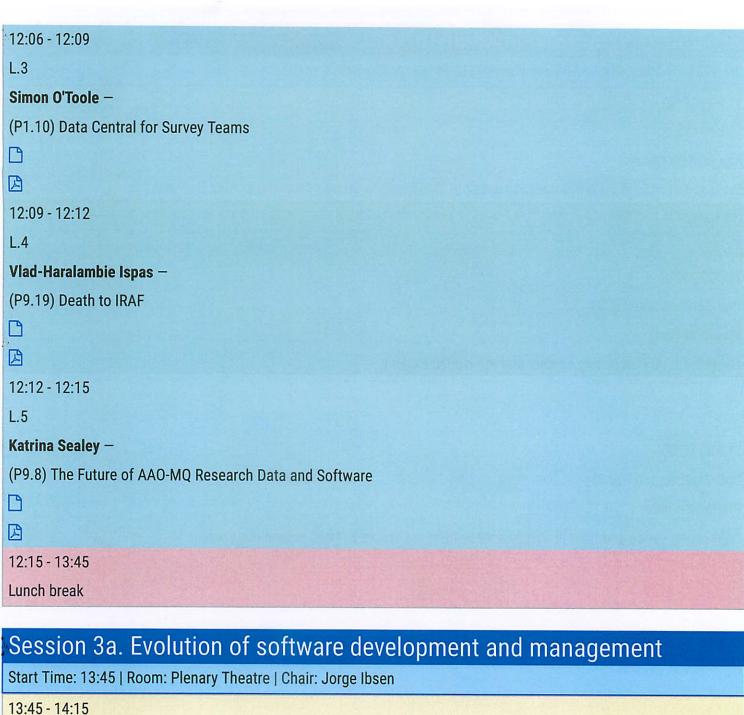
Sara Nieto -

10:00 - 11:00

Coffee and Poster break

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Session 2. Multi-wavelength astronomy
Start Time: 11:00 Room: Plenary Theatre Chair: Keith Shortridge
11:00 - 11:30
Invited talk (I2.1)
Ranga-Ram Chary —
Euclid, LSST, WFIRST Joint Survey Processing: The Whole is Greater Than the Sum of Its Parts
11:30 - 11:45
Oral Contribution (02.2)
Mattia Vaccari —
The Ilifu Cloud Computing Facility and the HIPPO Project
11:45 - 12:00
Oral Contribution (02.3)
Pierre Fernique —
Connecting space and time in a multi-messenger landscape: STMOC behind the scene
Lightning Session 1
Start Time: 12:00 Room: Plenary Theatre Chair: Keith Shortridge
12:00 - 12:03
L.1
Andrey Andrianov —
(P1.4) Computational aspects of Space-VLBI missions ("Radioastron" and "Millimetron")
12:03 - 12:06
L.2
Martin Kuemmel –
(P1.6) Working with the SExtractor++ software



Session 3a. Evolution of software development and management Start Time: 13:45 | Room: Plenary Theatre | Chair: Jorge Ibsen 13:45 - 14:15 Invited talk (I3.1) Michael Crusoe — Saving money, time, and stress with standards-based workflows 14:15 - 14:30 Oral Contribution (03.2) Gijs Verdoes Kleijn —

Data model as agile basis for evolving calibration software

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14:30 - 14:45

Oral Contribution (03.3)	1
Jouke Roorda —	
Functional programming: why you should care	
14:45 - 15:00	
Oral Contribution (O3.4)	
Megan Sosey —	
Evolution of Science Data Pipelines: From HST, to JWST, to WFIRST	
<u> </u>	
15:00 - 16:00	
Coffee and Poster break	
Session 3b. Evolution of software development and management	
Start Time: 16:00 Room: Plenary Theatre Chair: Jorge Ibsen	
16:00 - 16:15	
Oral Contribution (03.5)	
Xiuqin Wu —	
Experience in software development and management	
16:15 - 16:30	
Oral Contribution (03.6)	
Yan Grange —	
The struggle towards an open source policy	
16:30 - 16:45	
Oral Contribution (03.7)	
Jessica Mink —	
Lessons Learned From Developing and Maintaining Shared Astronomical Software Packages	
16:45 - 17:05	
Hackathon prizes	

Birds of a Feather (B.1)	Birds of a Feather (B.2)	Birds of a Feather (B.3)
Start Time: 17:10 Room: Plenary	Start Time: 17:10 Room: 1 & 2	Start Time: 17:10 Room: 5 & 6
Theatre	17:10 - 18:10	17:10 - 18:10
17:10 - 18:10	Jessica Mink –	Jan Noordam —
Chenzhou Cui —	Data Formats BoF	Escaping from the herd of white
Education and public outreach in		elephants
the era of Big Data science		
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B		

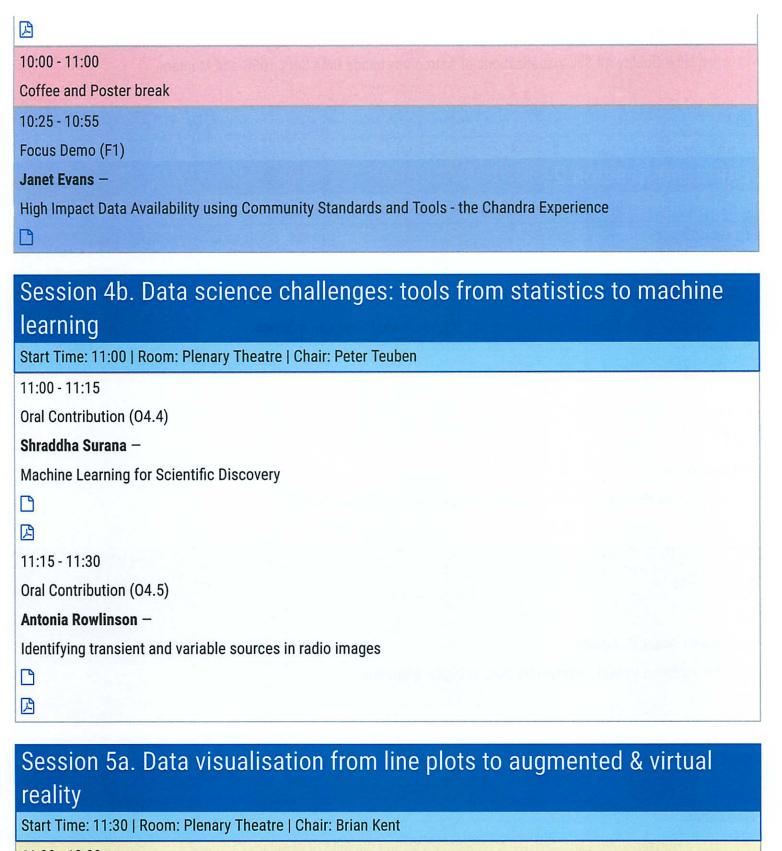
Tuesday 8th of October 2019

08:55 - 09:00

Morning announcements

Session 4a. Data science challenges: tools from statistics to machine learning

learning
Start Time: 09:00 Room: Plenary Theatre Chair: Peter Teuben
09:00 - 09:30
Invited talk (I4.1)
Daniela Huppenkothen —
Data Science Challenges in Time Domain Astronomy: Building Methods, Tools and Communities
09:30 - 09:45
Oral Contribution (04.2)
Yanxia Zhang —
Photometric Redshift Estimation of Quasars by Machine Learning
09:45 - 10:00
Oral Contribution (04.3)
Sweta Singh —
Scientific Visualisation of Extremely Large Distributed Astronomical Surveys



11:30 - 12:00

Invited talk (I5.1)

Jacqueline Faherty -

Visualizing a billion stars

12:00 - 12:15

Oral Contribution (05.2)

Bruce Berriman —
Creating High Quality All-Sky Visualizations of Astronomy Image Data Sets: HiPS and Montage
Lightning Session 2
Start Time: 12:15 Room: Plenary Theatre Chair: Brian Kent
12:15 - 12:18
L.6
James Nightingale —
(P3.7) PyAutoFit: An Open-Source Framework for Automated Bayesian Inference
12:18 - 12:21
L.7
Amanda Ibsen —
(P3.10) Prompt detection of super-luminous supernovae with deep learning
12:21 - 12:24
L.8
Venustiano Soancatl Aguilar —
(P4.9) Visualising Virtual Observatory Data in Digital Planetaria
12:24 - 12:27
L.9
Fred Lahuis —
(P3.16)The Horizon-2020 ExoplANETS_A project: advancing the field of exoplanet science
12:27 - 12:30
L.10
J. B. Raymond Oonk —
(P6.1) Pioneering the Exascale era with Astronomy



12:30 - 14:00

Lunch break

Focus Demo (F2)

Session 5b. Data visualisation from line plots to augmented	l & virtual
reality	
Start Time: 14:00 Room: Plenary Theatre Chair: Brian Kent	
14:00 - 14:15	1770
Oral Contribution (05.3)	
Harro Verkouter –	
jiveplot: Inspecting large volumes of raw radio data made easy	
14:15 - 14:30	
Oral Contribution (05.4)	
William Roby —	
Firefly and Python- new ways to visualize data on the web	
14:30 - 14:45	
Oral Contribution (05.5)	
Lucia Marchetti —	
The Data2Dome Initiative at the Iziko Planetarium in Cape Town and the IDIA Visualisation Lab	
14:45 - 15:00	
Oral Contribution (05.6)	
Tatiana Goldina —	211
Integrating Plotly charts into Firefly visualization system	
	all as ideas by
15:00 - 16:00	
Coffee and Poster break	
15:25 - 15:55	

Brian Cherinka —
Marvin: A Toolkit for Streamlined Access and Visualization of the SDSS-IV MaNGA Data Set
Session 6. Local and global cloud infrastructure for processing and
storage
Start Time: 16:00 Room: Plenary Theatre Chair: Francesco Pierfederici
16:00 - 16:30
Invited talk (I6.1)
Christine Banek —
Why is the LSST Science Platform built on Kubernetes?
16:30 - 16:45
Oral Contribution (06.2)
Vicente Navarro —
Multi Mission Science Exploitation and Preservation Platform
16:45 - 17:00
Oral Contribution (06.3)
Jun Han —
The design and realization of mass data processing model for the Five hundred meters Aperture Spherical Radio
Telescope
17:00 - 17:15
Oral Contribution (06.4)
Rees Williams —
The Euclid Archive Processing and Data Distribution Systems: a distributed infrastructure for Euclid and associated
data

Birds of a Feather (B.4)	Birds of a Feather (B.5)	Birds of a Feather (B.6)
Start Time: 17:20 Room: Plenary	Start Time: 17:20 Room: 1 & 2	Start Time: 17:20 Room: 5 & 6
Theatre	17:20 - 18:20	17:20 - 18:20
17:20 - 18:20	Yan Grange —	Martin Vogelaar —
Vanessa Moss —	Accelerating scientific discoveries	Teaching our students astro
Forming a global network for	in the modern hardware	computing
communication between	landscape	
astronomical observatories		
	B	

Conference Dinner

Start Time: 20:00

20:00 - 23:00

Dinner at restaurant 'de Rietschans'



Wednesday 9th of October 2019

08:55 - 09:00

Morning announcements

Session 7a. Telescope operations and scheduling: from classical to autonomous

Start Time: 09:00 | Room: Plenary Theatre | Chair: Pascal Ballester

09:00 - 09:30

Invited talk (17.1)

Josep Colomé -

STARS: Telescope and space mission scheduling towards a multi-observatory framework



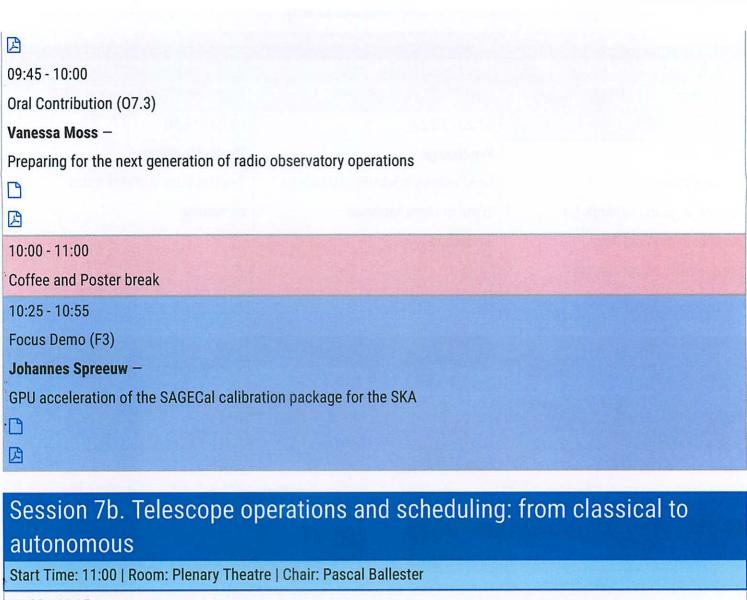
09:30 - 09:45

Oral Contribution (07.2)

Roberto Pizzo -

LOFAR: challenges and solutions to operate the World's largest radio telescope





11:00 - 11:15

Oral Contribution (07.4)

Benjamin Winkel -

Starlink, OneWeb and 5G - A new dark age for radio astronomy?





11:15 - 11:30

Oral Contribution (07.5)

Matthias Schartner -

Presentation of a new VLBI scheduling software VieSched++



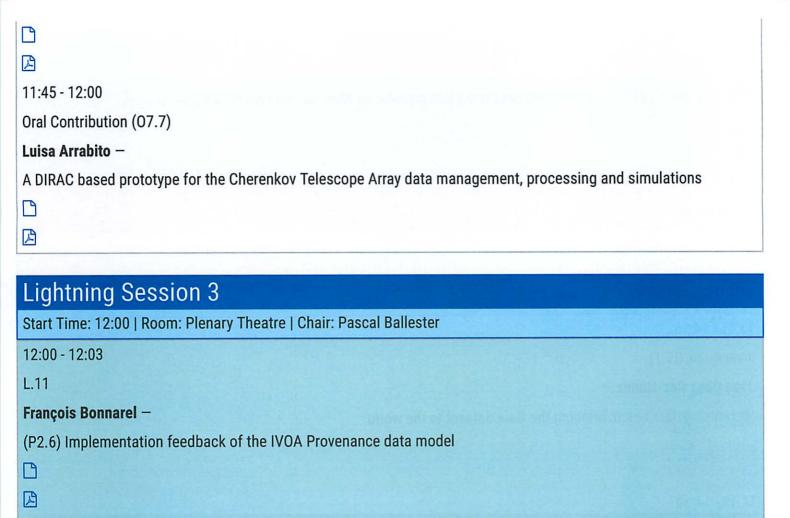


11:30 - 11:45

Oral Contribution (07.6)

Eva Sciacca -

Big Data Architectures for Logging and Monitoring Large Scale Telescope Arrays



12:03 - 12:06

L.12

Sander ter Veen -

(P8.13) Calibration of a phased array using holography: the LOFAR case.



12:06 - 12:09

12.00 - 12.03

L.13

Pablo Gutiérrez-Marqués -

(P8.17) Operability vs optimization in automated telescopes. Lessons learnt from robotic space exploration.



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12:09 - 12:12

L.14

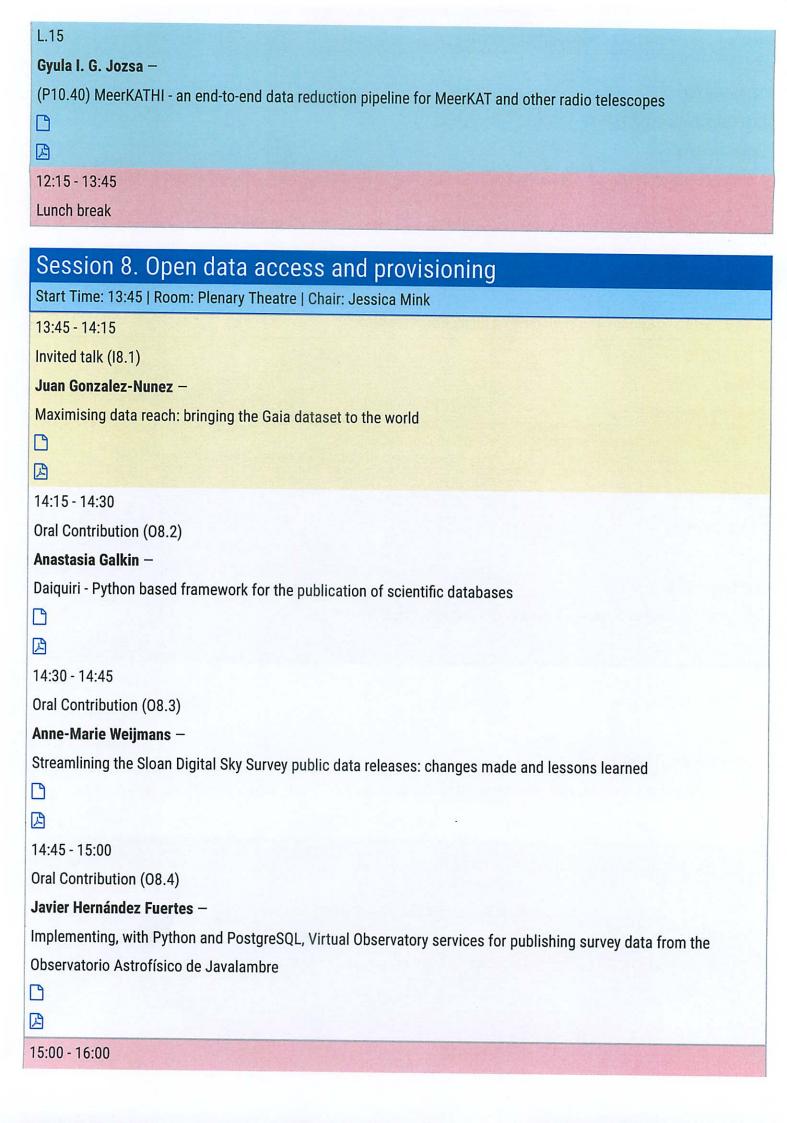
Karan Vahi -

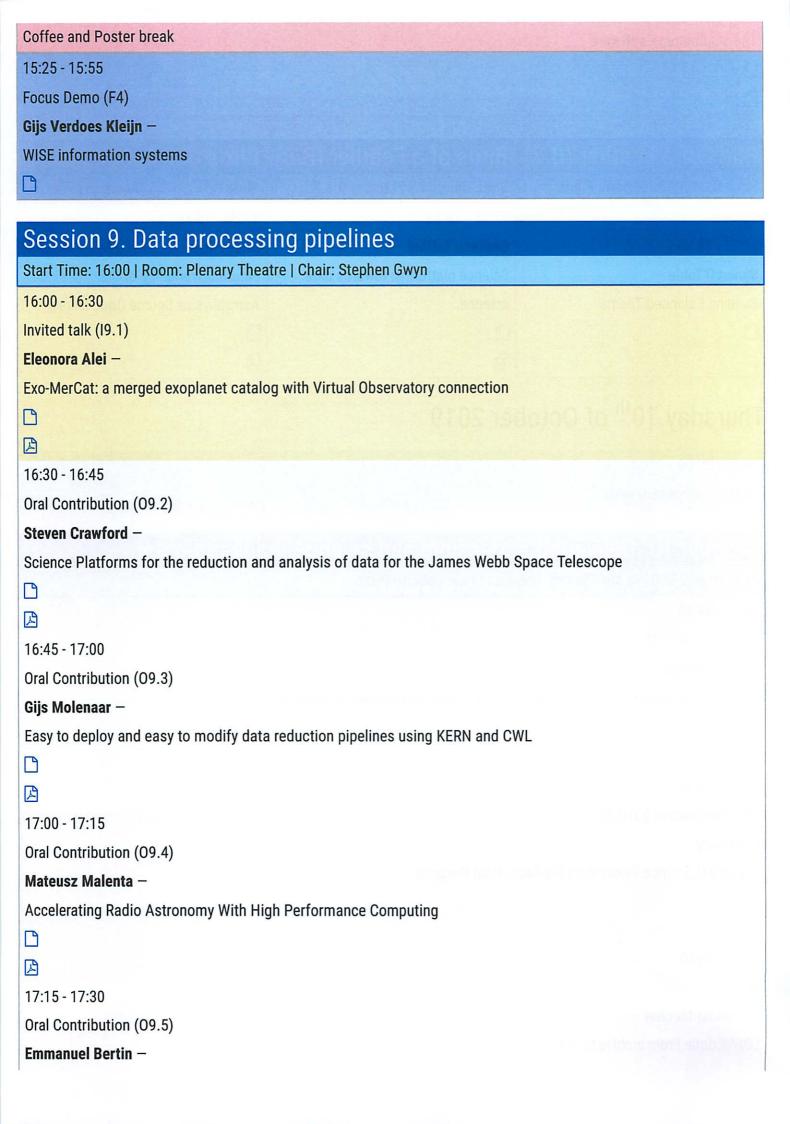
(P10.39) Gearing the DECam Analysis Pipeline for Multi-Messenger Astronomy using Pegasus Workflows





12:12 - 12:15





The SExtractor++ software	

Birds of a Feather (B.7)	Birds of a Feather (B.8)	Birds of a Feather (B.9)
Start Time: 17:35 Room: Plenary	Start Time: 17:35 Room: 1 & 2	Start Time: 17:35 Room: 5 & 6
Theatre	17:35 - 18:35	17:35 - 18:35
17:35 - 18:35	Giuliano Taffoni –	Alice Allen –
Simon O'Toole —	Science platforms: towards data	Future Governance of the
Building Balanced Teams	science.	Astrophysics Source Code Library
		B

Thursday 10th of October 2019

08:55 - 09:00

Morning announcements

Session 10. Delivering accessible and science-ready radio data

Start Time: 09:00 | Room: Plenary Theatre | Chair: Roberto Pizzo

09:00 - 09:30

Invited talk (I10.1)

André Offringa -

Designing radio-astronomical software for delivering science-ready products

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09:30 - 09:45

Oral Contribution (010.2)

Mark Lacy -

The NRAO Science Ready Data Products Pilot Program

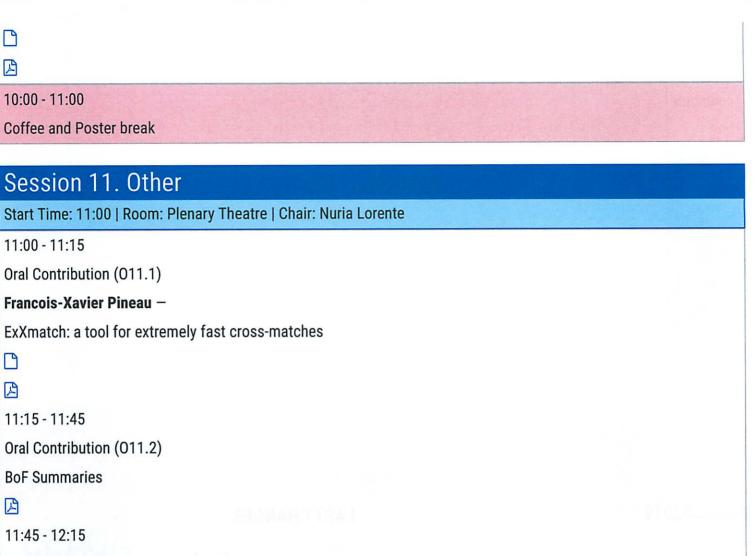
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09:45 - 10:00

Oral Contribution (010.3)

Alexandar Mechev -

LOFAR data: From archive to arXiv



Birds of a Feather Discussion (B.10)

Peter Teuben -

The Future of Proceedings





12:15 - 12:30

Closing remarks

12:30 - 13:30

Boxed lunch

13:30

Bus leaves for tour of telescopes (Departure Martiniplaza)





Legend

Invited