



# Report from the event supported by RadioNet

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**TITLE** *YOUNG EUROPEAN RADIO ASTRONOMERS CONFERENCE (YERAC)*

**DATE:** *4-6 SEPTEMBER 2018*

**LOCATION:** *DWINGELOO, THE NETHERLANDS*

**MEETING WEBPAGE:** *<http://jive.eu/yerac2018/>*

**HOST INSTITUTE:** *JIV-ERIC & NWO-I (ASTRON)*

**RADIONET  
BENEFICIARY / NO:** *05 & 02*

# Report:

## 1. SCIENTIFIC SUMMARY

*YERAC formally took place from 4-6 September. Host institutes were JIVE (JIV-ERIC) and ASTRON (NWO-I).*

*Due to the rural location, the participants arrived on Monday 3 September and started with an informal welcome reception. Though born out of logistical necessity, it formed a perfect opportunity to get to know everyone. At the formal start of the meeting on Tuesday there was a notable relaxed atmosphere and familiarity among the participants.*

*The core of the YERAC2018 were presentations from all participants. Everyone was allocated 20 minutes (15+5). Topics covered all aspects of radio astronomy, from solar physics to cosmology, from technical to theoretical studies. The presentations were of an outstanding level. Everyone stuck to the allotted time, and all talks were followed by questions and discussion. The programme of mixed topics and no more than 4 consecutive talks allowed for extensive informal interaction during the breaks. The programme also included contributed talks, workshops, tours and social events.*

*Day 1 started with a formal welcome by Carole Jackson (ASTRON) and Zsolt Paragi (JIVE). Keynote presentations were given on JIVE and EVN by Benito Marcote, and LOFAR by Emanuela Orru'. Harry van der Laan, one of the YERAC initiators, contributed a presentation on YERAC history. In the afternoon the participants visited the JIVE correlator, the ASTRON control room and the Dwingeloo Radio Telescope.*

*Day 2 included an interactive workshop on science communications by Gina Maffey and Iris Nijman, which was very well received. This was followed by an excursion to the WSRT. Participants were told about Apertif, shown around the former control room, the currently fastest computer in the Netherlands (ARTS) and the old MFFE back-ends. One of the dishes was parked so everyone could touch and see it up close, and inspect the cabin with the back-end processors.*

*On day 3 the NOVA optical lab organized a presentation and tour of their facilities, to demonstrate the close connection between radio and optical astronomy, and the unique challenges in building optical instrumentation. Towards the closing of the day a presentation on research mobility and funding was given by John McKean, who kindly stepped in at very short notice. The closure of YERAC consisted of a pub-quiz, which was great fun.*

*During the entire event, there was active involvement on social media. All participants signed the consent form for sharing this information, following the new EU guidelines. The tag #YERAC2018 leads to the majority of posts on Twitter and Facebook. All participants had a mention and picture on Twitter, and several shared this on their personal accounts. The event resulted in a dedicated Facebook group for all the participants to keep in touch.*

*As all participants are early career researchers, there was a large spread in science topics and impact. It is clear that machine learning and advanced computing technologies are a growing big part of radio astronomy, especially for big-data instruments such as LOFAR. Machine learning can also be employed in data analysis of big-data projects, like pulsar and FRB searches. Such methods require group efforts and new skill-sets in radio astronomers. YERAC provided a platform to recognize this and lay the foundation for future collaborations in this field.*

*Another potential high impact of YERAC is the link to African astronomy, which ties in with projects such as DARA, JUMPING JIVE, SKA and the AVN. The development of radio astronomy in African countries requires education of African astronomers in well-established institutes, several of which attended YERAC. They will need extensive global networks to start radio astronomy departments in their home countries. YERAC enabled them to build networks outside their current European host institutes.*

*For early career scientists from countries with limited research funds (Russia, Ukraine) YERAC is the only opportunity to present their work to an international audience. This makes it indispensable for maintaining and expanding existing European networks such as the EVN.*

*In the current research culture YERAC offers a refreshing counterpoint to learning-intensive data schools by focusing on building bonds as a basis for future research networks, rather than improving individual research skills. At the end of the meeting, the participants had not only exchanged their research interests, but made many new friends as well, a strong basis for future collaborations. YERAC is crucial for building a strong research environment for radio astronomy in Europe and beyond.*

*In summary, the YERAC2018 was an extremely pleasant experience for everyone involved. Both the participants and the LOC urge RadioNet and the radio astronomical community to ensure accessibility and continuity of the event for future generations. As part of the legacy of this YERAC, interviews with several participants and Harry van der Laan will be made available to advertise YERAC in the future.*

*The LOC consisted of Ilse van Bemmel (JIVE, chair), Katharina Immer (JIVE, vice-chair), Gina Maffey (JIVE), Yvonne Kool (JIVE), Marjan Tibbe (ASTRON) and Robert Schulz (ASTRON). The LOC wishes to thank RadioNet, the Leidsch Kerkhoven-Bosscha Fonds, JIVE, and ASTRON for financial support of YERAC2018.*

## **2. AGENDA OF THE EVENT**

*For the agenda see page 8 or <http://jive.eu/yerac2018/programme.php>*

## **3. PARTICIPANTS**

*Prior to the meeting the LOC noted that attracting participants proved an interesting challenge, and the total number of interested candidates did not exceed 45 people. Finding representation from the EVN institutes required significant effort.*

*Selection was done using the letter of reference (no letter implied no participation), and suitability of the candidates (early career and radio astronomical research). This resulted in 32 participants, of which two canceled on short notice. A complete list is included in the Appendix.*

*In the call, and during the selection process, specific attention was given to diversity and accessibility of the meeting. The group contained over 1/3 women and several native African astronomers. Participants' nationalities spanned the entire globe, their current institutes being well distributed within Europe. The LOC ensured that a diverse group of local early career researchers was involved in chairing the sessions and guiding the tours.*



YERAC2018 group photo

#### **4. RADIONET FINANCIAL CONTRIBUTION**

*The RadioNet contribution of €10.000 was used to provide shared accommodation (two persons per room), transportation to and from the nearby train station in Hoogeveen, local transportation in the form of rental bikes, transportation for the tour to the WSRT, welcome reception and other subsistence during the meeting, and supporting materials. This covered all participants.*

#### **5. PUBLICATIONS**

*No publications have been made so far.*



## 6. APPENDIX

FirstName	FamilyName	Institute	Country	Email	RNew
Marilyn	Crues	Max-Planck Institute for Radioastronomy	Germany	mscrues@mpi-fr-bonn.mpg.de	No
Katarzyna	Dutkowska	Centre for Astronomy, Nicolaus Copernicus University	Poland	272924@fizyka.umk.pl	Yes
Hyoyin	Gan	Kapteyn Astronomical Institute	Netherlands	hgan@astro.rug.nl	Yes
Miguel	Gomez	Yebe's Observatory	Spain	m.gomezgarrido@oan.es	Yes
Kelly	Gourdji	Anton Pannekoek Institute (UVA)	Netherlands	k.gourdji@uva.nl	No
Joe	Hanson	University of Manchester	United Kingdom	joseph.hanson@postgrad.manchester.ac.uk	Yes
Tonye	Irabor	University of Leeds	United Kingdom	ee1ts@leeds.ac.uk	Yes
Andrey	Kazantsev	Pushchino Radio Astronomy Observatory	Russian Federation	kaz.prao@bk.ru	Yes
Thor	Kravtsov	Institute of Radio Astronomy of NAS of Ukraine	Ukraine	i.p.kravtsov@gmail.com	Yes
Xiaojin	Liu	Jodrell Bank Centre for Astrophysics	United Kingdom	xiao-jin.liu@postgrad.manchester.ac.uk	Yes
Nicola	Locatelli	JRA - Istituto di Radio Astronomia	Italy	locatelli@ira.inaf.it	No
Parichay	Mazumdar	Max-Planck-Institut für Radioastronomie	Germany	pmazumdar@mpi-fr-bonn.mpg.de	Yes
Mukul	Mhaskay	Department of Physics, University of Pune	India	mhaskeymukul@gmail.com	No
Jordan	Molet	Laboratoire d'Astrophysique de Bordeaux	France	jordan.molet@u-bordeaux.fr	Yes
Suma	Murthy	Kapteyn Astronomical Institute	Netherlands	murthy@astro.rug.nl	Yes
Isaac	Mutie	Technical University of Kenya	Kenya	munnoisac@gmail.com	Yes
Willice	Obonyo	University of Leeds	United Kingdom	pywoo@leeds.ac.uk	Yes
Valeria	Olivares	Observatoire de Paris	France	vvaleolivares@gmail.com	Yes
Raeesa	Parker	University of Central Lancashire	United Kingdom	rparker4@uclan.ac.uk	Yes
Aleksandr	Popkov	Moscow Institute of Physics and Technology	Russian Federation	popkov.av@mipt.ru	Yes
Fernando	Rico	CAB-CSIC	Spain	frico@cab.inta-csic.es	Yes
Enrique	Sanchis	European Southern Observatory	Germany	esanchis@eso.org	Yes
Mykola	Shevchuk	Institute of radio astronomy	Ukraine	mykola.shevchuk@rian.kharkov.ua	Yes
Senior	Shimhanda	University of Hertfordshire	United Kingdom	shimzenior@gmail.com	Yes
Janis	Steinbergs	Ventspils University of Applied Sciences, Ventspil	Latvia	janis.steinbergs@venta.lv	Yes
Nasrin	Talebpour Sheshvan	University of Turku	Finland	natash@utu.fi	Yes
Hongming	Tang	Jodrell Bank Centre for Astrophysics	United Kingdom	hongming.tang@manchester.ac.uk	Yes
María	Timirkheva	Pushchino radioastronomical observatory	Russian Federation	marka-ko@yandex.ru	Yes
Thalia	Trailanou	Max Planck Institute for Radio Astronomy	Germany	etralanou@mpifr.de	Yes
Charlarth	Vyas	Angelander-Institut für Astronomie	Germany	cvyas@astro.uni-bonn.de	Yes
Aoife Maria	Ryan	Trinity College Dublin	Ireland	ryana38@tcd.ie	Yes
Henryk	Haniewicz	University of East Anglia	United Kingdom	h.haniewicz@uea.ac.uk	No



# YERA 2018

4-6 September 2018, Dwingeloo, the Netherlands

First name	Last name	Signature
Marilyn	Cruces	
Katarzyna	Dutkowska	
Hyoyin	Gan	
Kelly	Gourdji	
Henryk	Haniewicz	
Joe	Hanson	
Tonye	Irabor	
Andrey	Kazantsev	
Ihor	Kravtsov	
Anshu	Kumari	N/A
Xiaojin	Liu	
Nicola	Locatelli	
Parichay	Mazumdar	
Mukul	Mhaskey	
Jordan	Molet	



# YERA 2018

4-6 September 2018, Dwingeloo, the Netherlands

First name	Last name	Signature
Suma	Murthy	
Isaac	Mutie	
Willice	Obonyo	
Valeria	Olivares	
Raeesa	Parker	
Aleksandr	Popkov	
Fernando	Rico	
Aoife Maria	Ryan	
Enrique	Sanchis	
Mykola	Shevchuk	
Janis	Steinbergs	
Nasrin	Talebpour Sheshvan	
Hongming	Tang	
Maria	Timirkeeva	
Thalia	Traianou	
Charitarth	Vyas	

## Programme

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### Monday, 3rd September 2018

18:00 Welcome reception at Fletcher hotel De Borken

### Tuesday, 4th September 2018

08:30 Registration at JIVE / ASTRON

09:00 Carole Jackson & Zsolt Paragi Welcome address

09:20 Ihor Kravtsov [The northern sky survey in order to find sporadic radio emission sources in decameter wave range](#)

09:40 Willice Obonyo [A search for non-thermal radio emission from jets of massive young stellar objects](#)

10:00 Thalia Traianou [Resolving the innermost jet region of radio quasars 3C454.3 and TXS 2013+370](#)

10:20 Joe Hanson [Investigating cosmic magnetism with machine learning](#)

10:40 Coffee

11:10 Benito Marcote Invited: Science with the European VLBI Network (EVN)

11:50 Emanuela Orrù Invited: Science with the Low-Frequency Array (LOFAR)

12:30 Harry van der Laan 1968-2018: European Radio Astronomy Then and Now

12:40 Group Photo

13:00 Lunch

14:10 Parallel tours LOFAR control room, EVN correlator

15:10 Mykola Shevchuk [Comparative analysis of the solar decameter spikes and striae](#)

15:30 Isaac Mutie [Fuelling star-formation and accretion in galaxies - tracing dense, molecular gas](#)

15:50 Tonye Irabor [A radio selected sample of planetary nebulae](#)

16:10 Coffee

16:40 Kelly Gourdjji [Low-frequency radio follow-up of gravitational wave merger events with LOFAR](#)

17:00 Charitharth Vyas [Fuel for the Milky Way star formation: Tracing the high Galactic latitude molecular clouds](#)

17:20 Nicola Locatelli [Assessing the magnetic cosmic web nearby galaxy cluster Abell 2744](#)

19:00 Dinner at Bospub

### Wednesday, 5th September 2018

09:00 Mukul Mhaskey [Extragalactic radio sources with sharply inverted spectrum at metre wavelengths](#)

09:20 Andrey Kazantsev [Giant radio pulses from pulsars: observation and investigation](#)

09:40 Enrique Sanchis [Modeling circumstellar disk observations for effective radii determination](#)

10:00 Fernando Rico [Witnessing the early stages of the formation of super star clusters in the nucleus of NGC253](#)

10:20 Coffee

11:00 Hyoyin Gan [Exploring subtle artefacts in data calibration of LOFAR](#)

11:20 Katarzyna Dutkowska [Infrared and 22 GHz water emission associated with a Sun-like protostar](#)



11:40	Nasrin Talebpour Sheshvan	<u>Study of the directivity of compact interplanetary radio type IV bursts</u>
12:00	Maria Timirkееva	<u>Radio pulsars with expected gamma-ray radiation and gamma-ray pulsars as pulsating radio emitters</u>
12:20		Lunch
13:30	Gina Maffey / Iris Nijman	Science communication workshop I
14:30		Coffee
15:00	Gina Maffey / Iris Nijman	Science communication workshop II
16:00		Bike or walk to Fletcher hotel De Borcken
16:30		From the Hotel: departure by bus for Excursion to the Westerbork Synthesis Radio Telescope
17:15		Tour of the Westerbork Synthesis Radio Telescope
19:00		Conference dinner at restaurant De Warrel in Westerbork

### Thursday, 6th September 2018

09:00	Parichay Mazumdar	<u>LASMA (13CO, J=3D 3-2) survey of the Milky Way</u>
09:20	Henryk Haniewicz	<u>PSR J1829+2456: A double neutron star system with measured masses</u>
09:40	Hongming Tang	<u>Convolutional neural network for giant radio galaxy (GRG) identification</u>
10:00	Suma Murthy	<u>Feedback from low luminosity radio AGNs: A case study of B2 0258+35</u>
10:20		Coffee
11:00	Jordan Molet	<u>Molecular complexity in the star forming region W43-MM1</u>
11:20	Marilyn Cruces	<u>Follow-up of FAST pulsar discoveries</u>
11:40	Aleksandr Popkov	<u>Relation between broad-band radio spectra and parsec-scale structure of extragalactic radio sources</u>
12:00	Janis Steinbergs	<u>First VLBI maser observations in Irbene - Torun baseline</u>
12:20		Lunch
13:30		Tour NOVA Optical InfraRed Instrumentation group
14:50	Raeesa Parker	<u>Categorising protoplanetary disc asymmetries observed with ALMA</u>
15:10	Xiaojin Liu	<u>High-precision pulsar timing and the motion of the pulsar in our Galaxy</u>
15:30		Coffee
16:00	Nhlakanipho, Kwazi Mthembu	<u>Calibrating HERA-19 with a Galactic centre observation</u>
16:20	Valeria Olivares	<u>ALMA observations of cold molecular gas in brightest cluster of galaxies</u>
16:40	Aoife Maria Ryan	<u>Imaging the solar corona during the March 2015 solar eclipse at low frequencies using LOFAR</u>
17:00	LOC	Concluding remarks
17:30	LOC	Pub Quiz
19:00		Dinner at JIVE / ASTRON