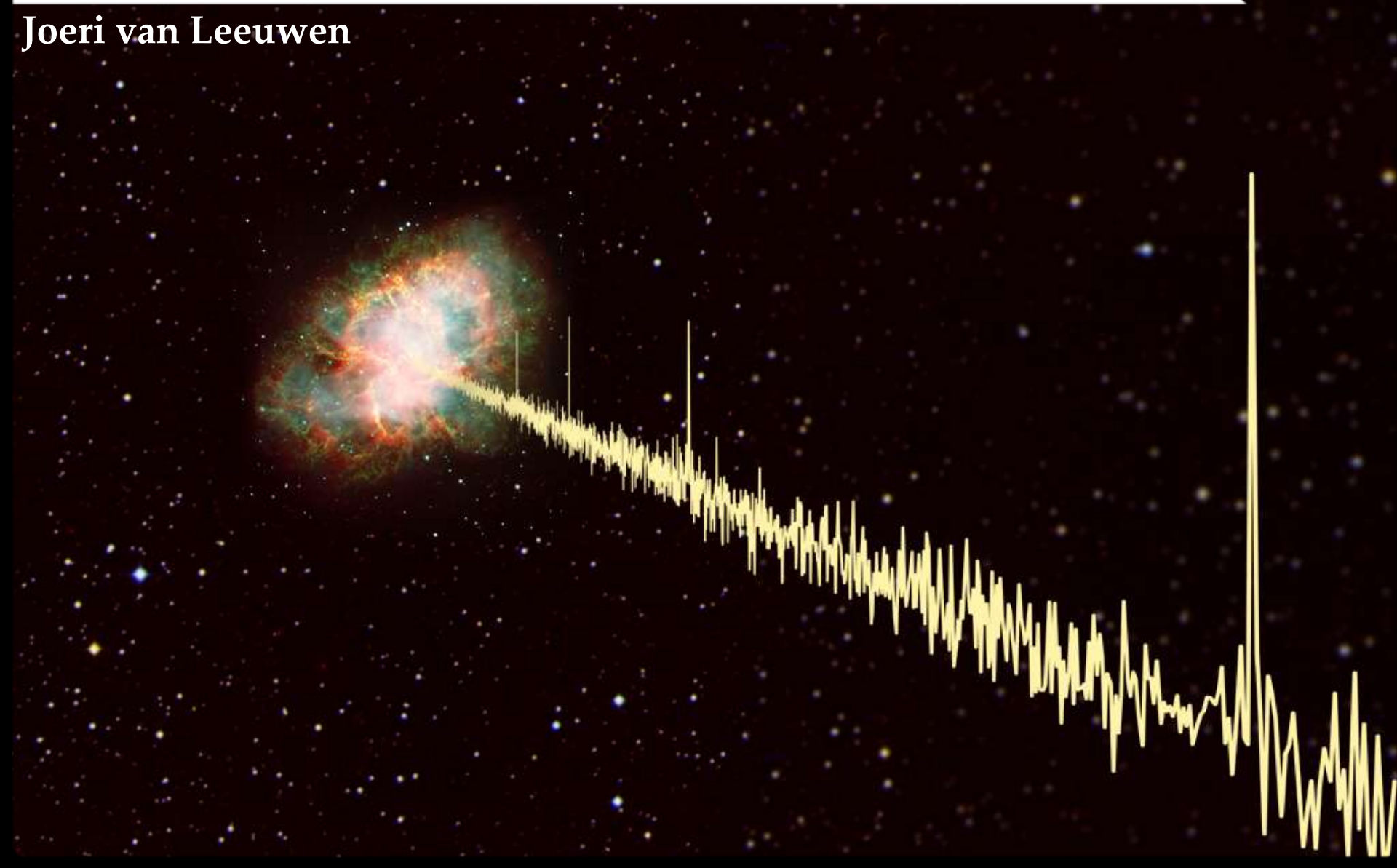


Extreme physics in space, seen with LOFAR

Joeri van Leeuwen



Extreme physics in space, seen with LOFAR

Joeri van Leeuwen



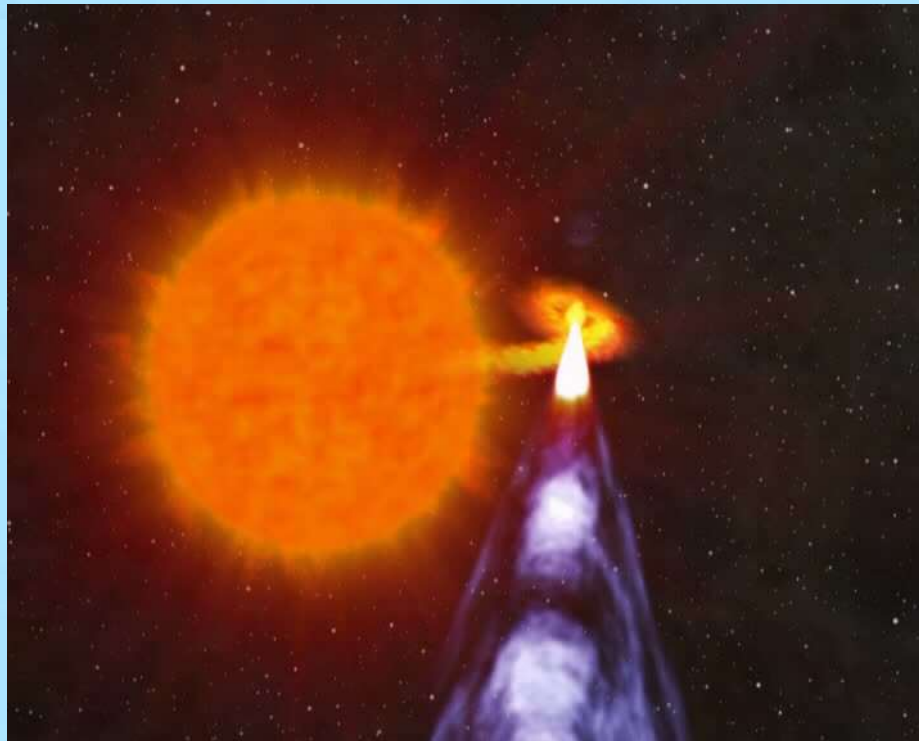
## Extreme physics in space, seen with LOFAR

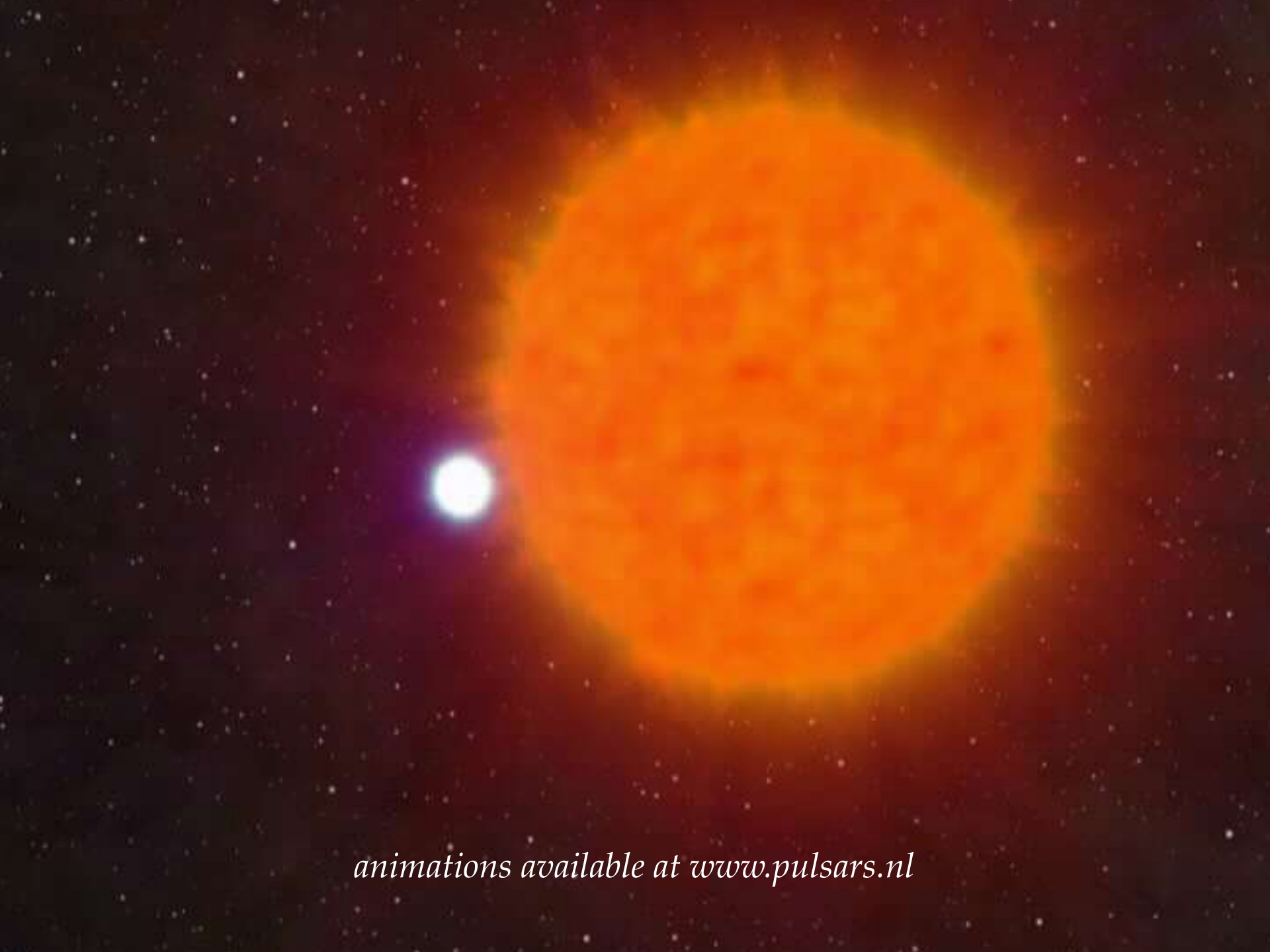
“Pulsars”, rotating neutron stars:

*animations available at [www.pulsars.nl](http://www.pulsars.nl)*

# Extreme physics in space, seen with LOFAR

How are these formed?

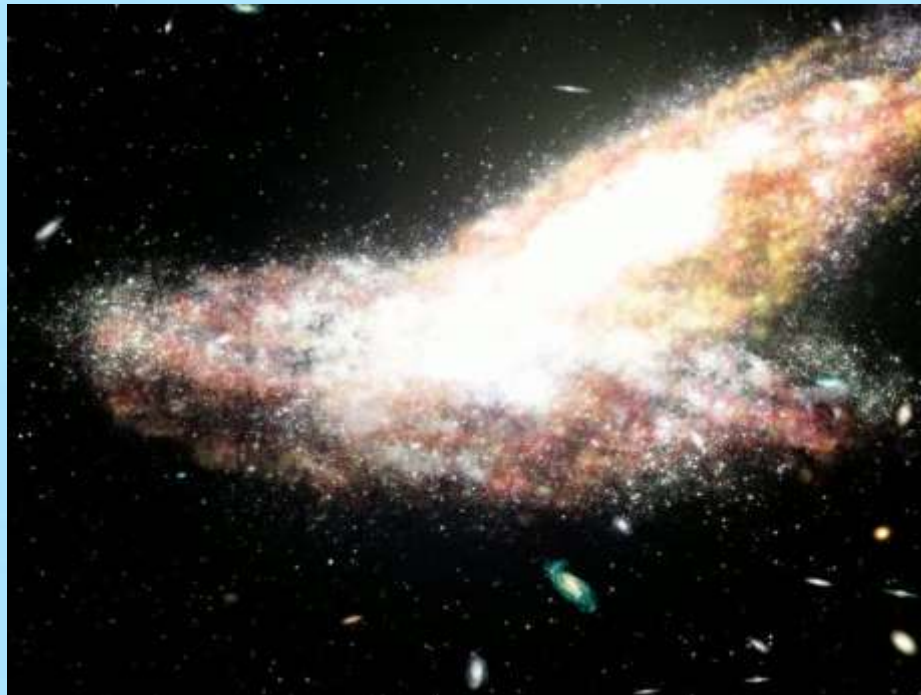




*animations available at [www.pulsars.nl](http://www.pulsars.nl)*

## Extreme physics in space, seen with LOFAR

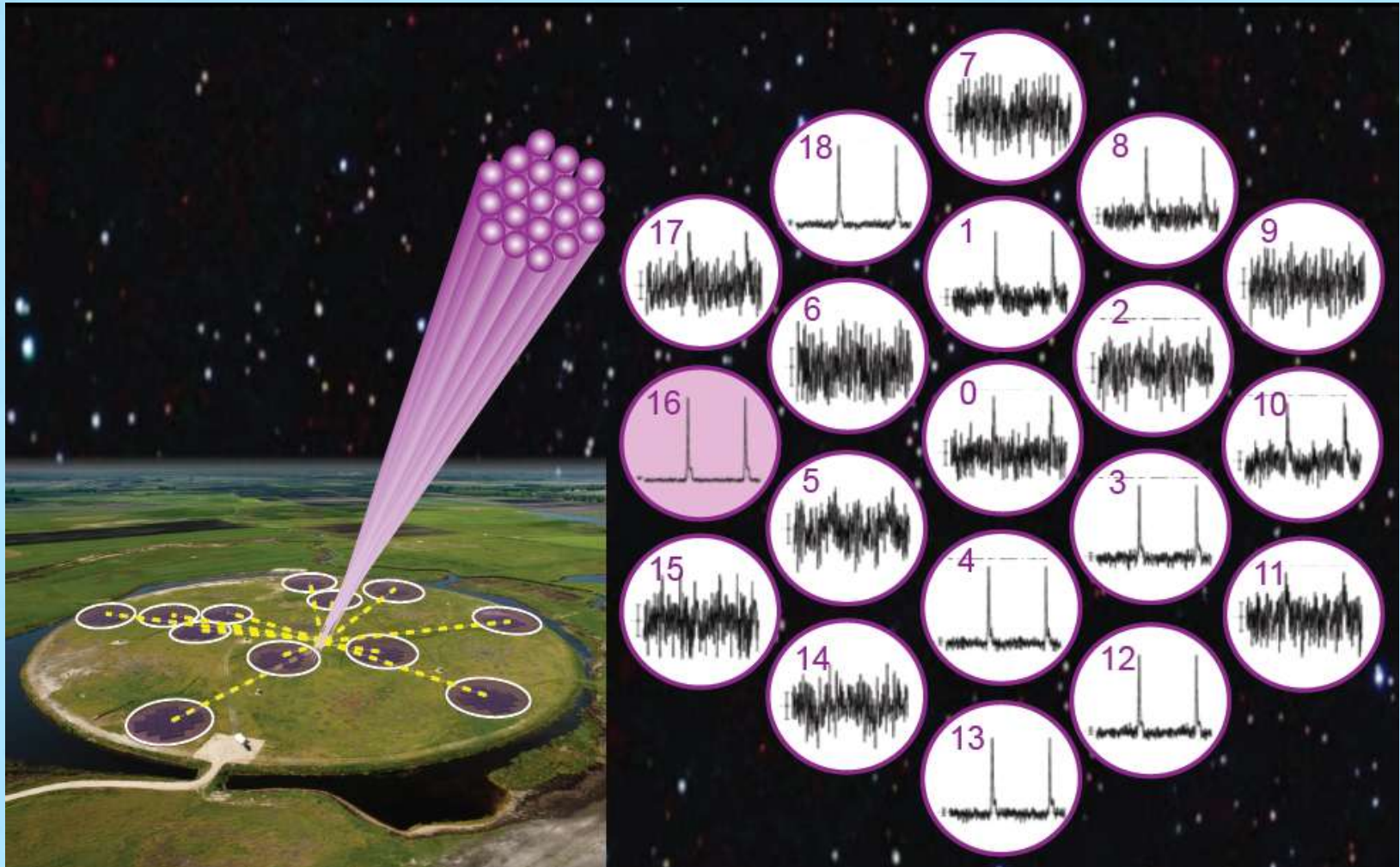
Pulsars are Nature's perfect clocks:



*animations available at [www.pulsars.nl](http://www.pulsars.nl)*

# Extreme physics in space, seen with LOFAR

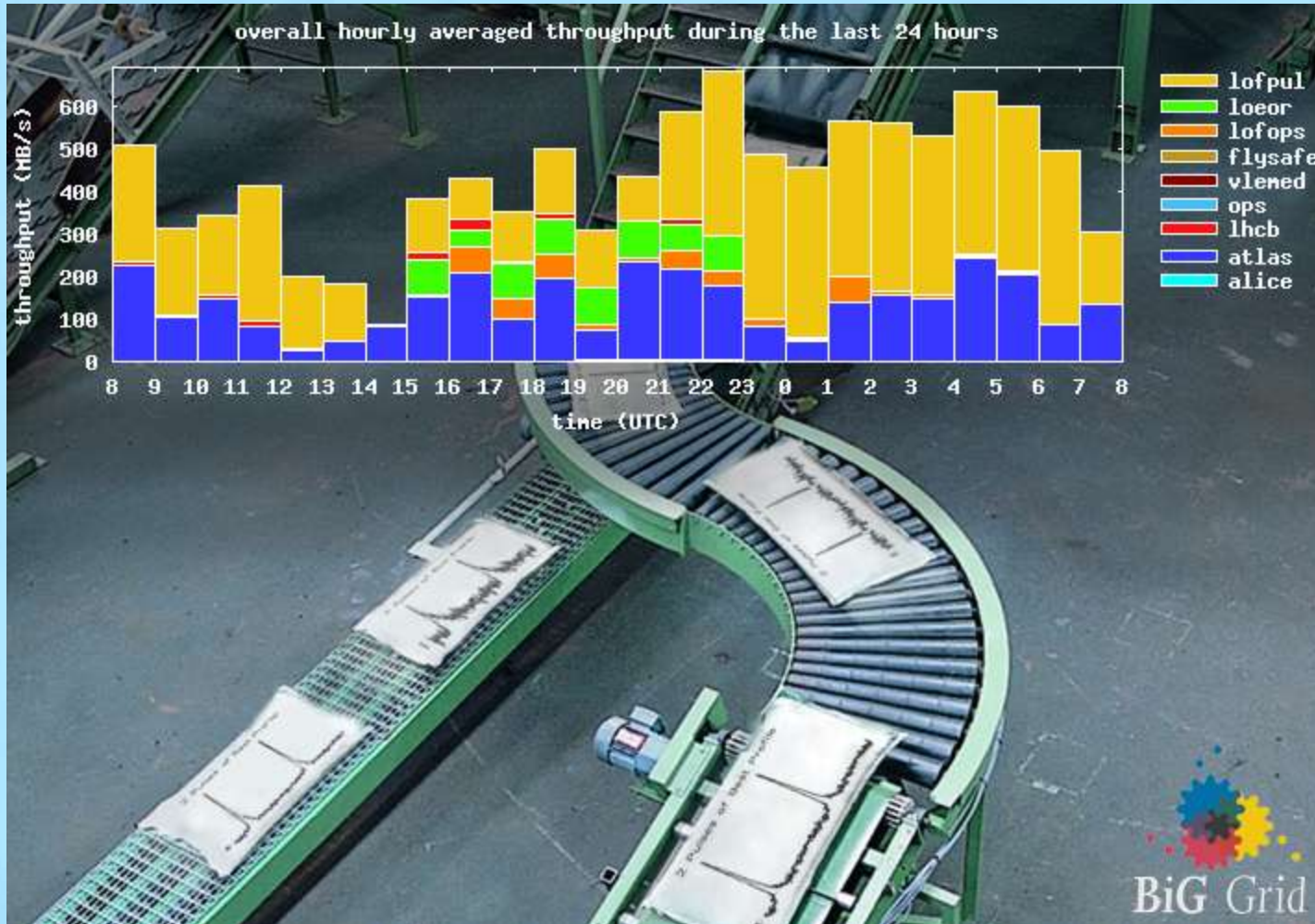
LOFAR are the 19 eyes





# Extreme physics in space, seen with LOFAR

A lightpath is the 10-Gbps optical nerve



## Extreme physics in space, seen with LOFAR

Then BiG Grid is the memory and the brain (tape, cluster)



## Extreme physics in space, seen with LOFAR

Big Grid porting, production:

Excellent support wrapping our (eclectic) search pipeline for processing  
About 300,000 core-hrs for first pass through pilot survey

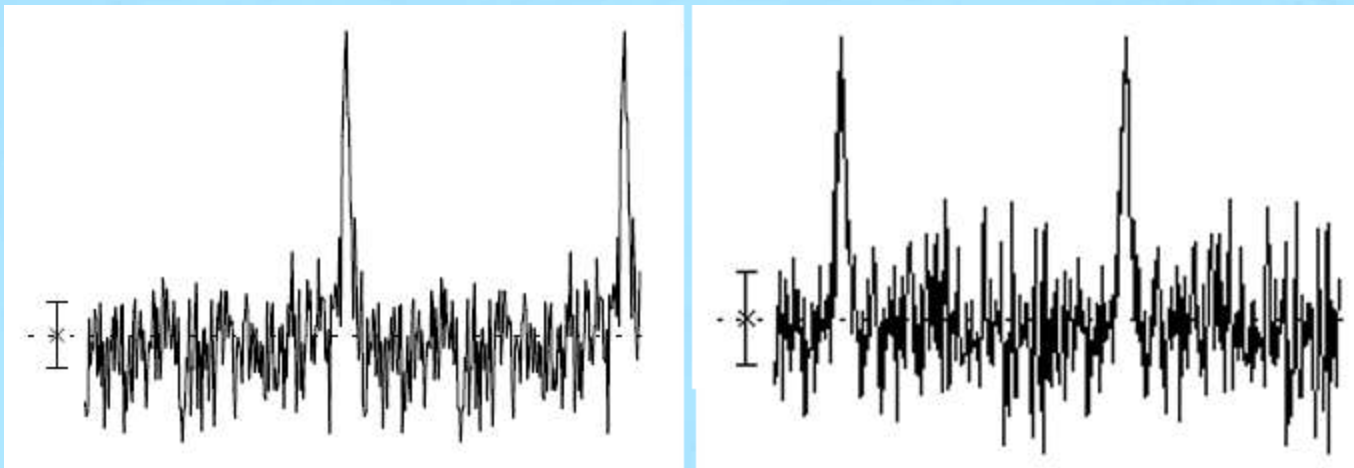
Those first results presented at the tri-annual  
International Astronomical Union General Assembly

## Extreme physics in space, seen with LOFAR

Big Grid porting, production:

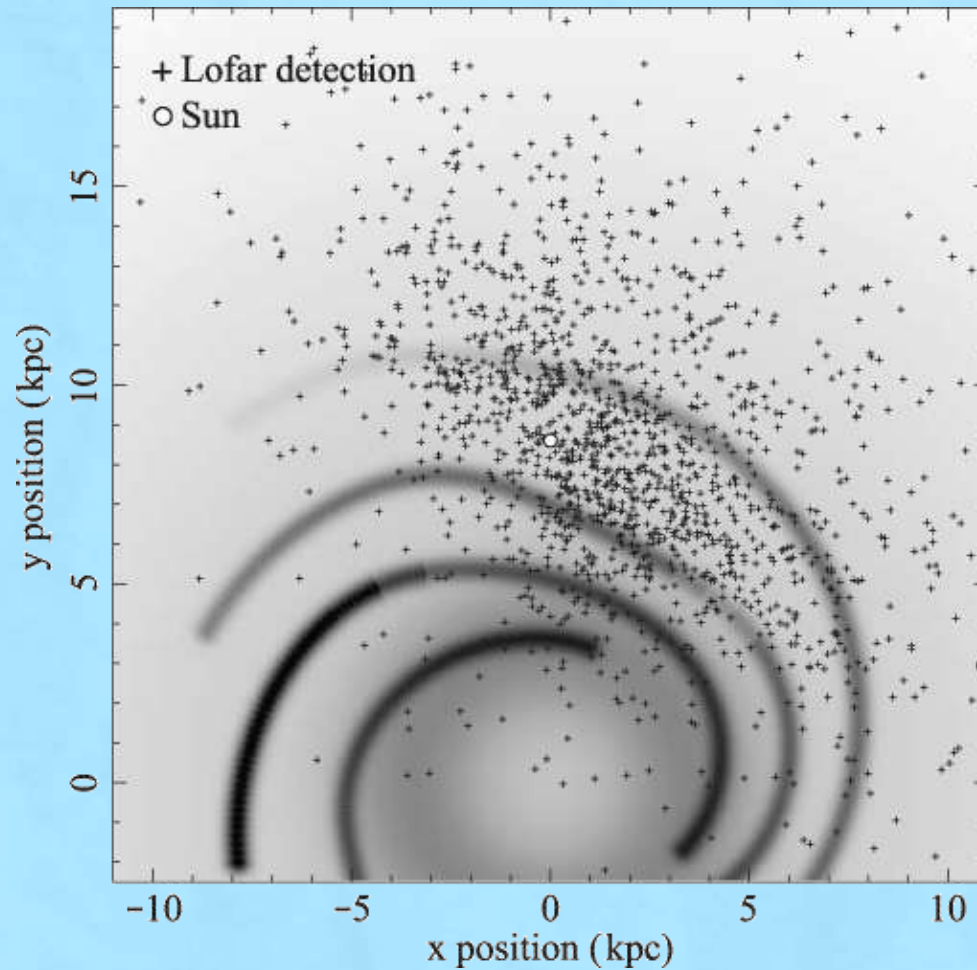
Excellent support wrapping our (eclectic) search pipeline for processing  
About 300,000 core-hrs for first pass through pilot survey

Those first results presented at the tri-annual  
International Astronomical Union General Assembly



# Extreme physics in space, seen with LOFAR

Expectation for full survey:



## Extreme physics in space, seen with LOFAR

2020: The Square Kilometer Array

A factor 10 more powerful, more sensitive, .. more challenging

