

Proposal preparation and submission



EVN observations of recurrent nova RS Oph



Justification

- Scientific
 - Why RS Oph (uniqueness) and how it links to targets in the same class and novae in general
- -What EVN enables
- Technical
 - Flux density
 - Detection significance
 - EVN antennas/dishes



Scientific justification

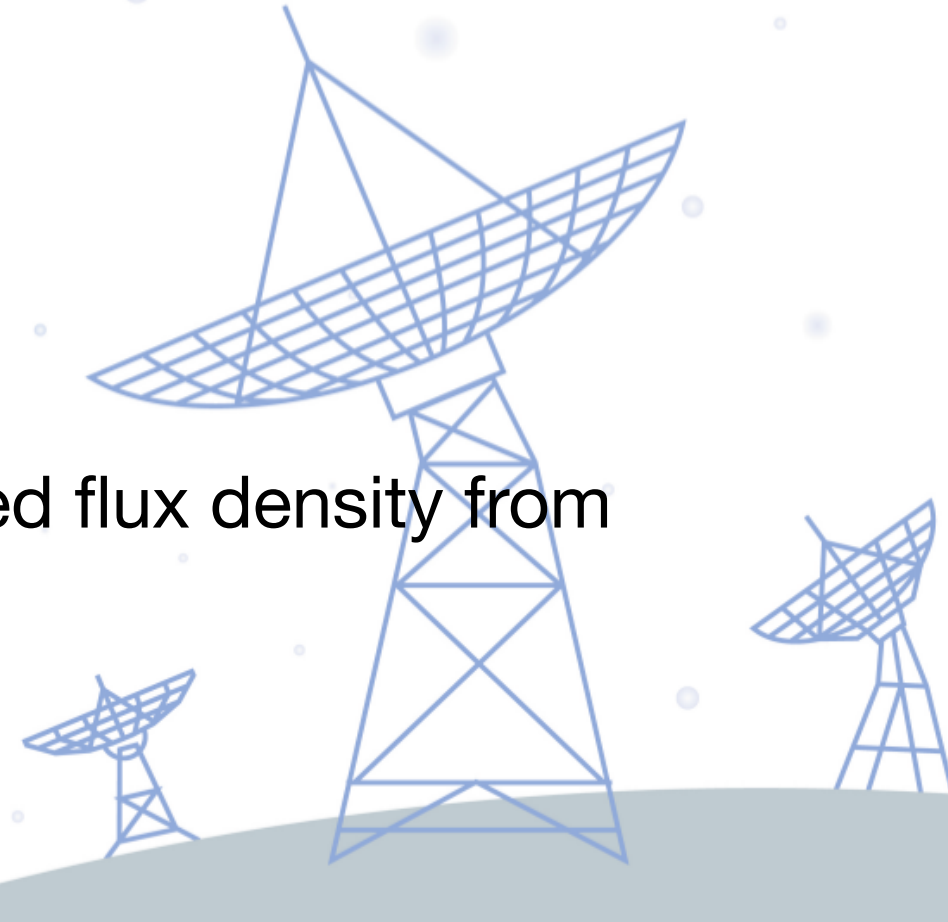
Background and motivation

- Problem being solved
 - How does this study fit in the big picture
- Targets to be observed, estimate the expected flux density from literature

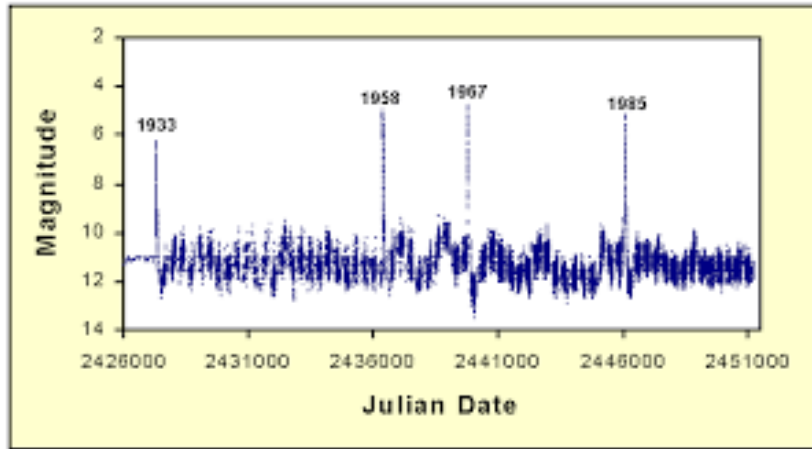
-Figures and references

-Page limit

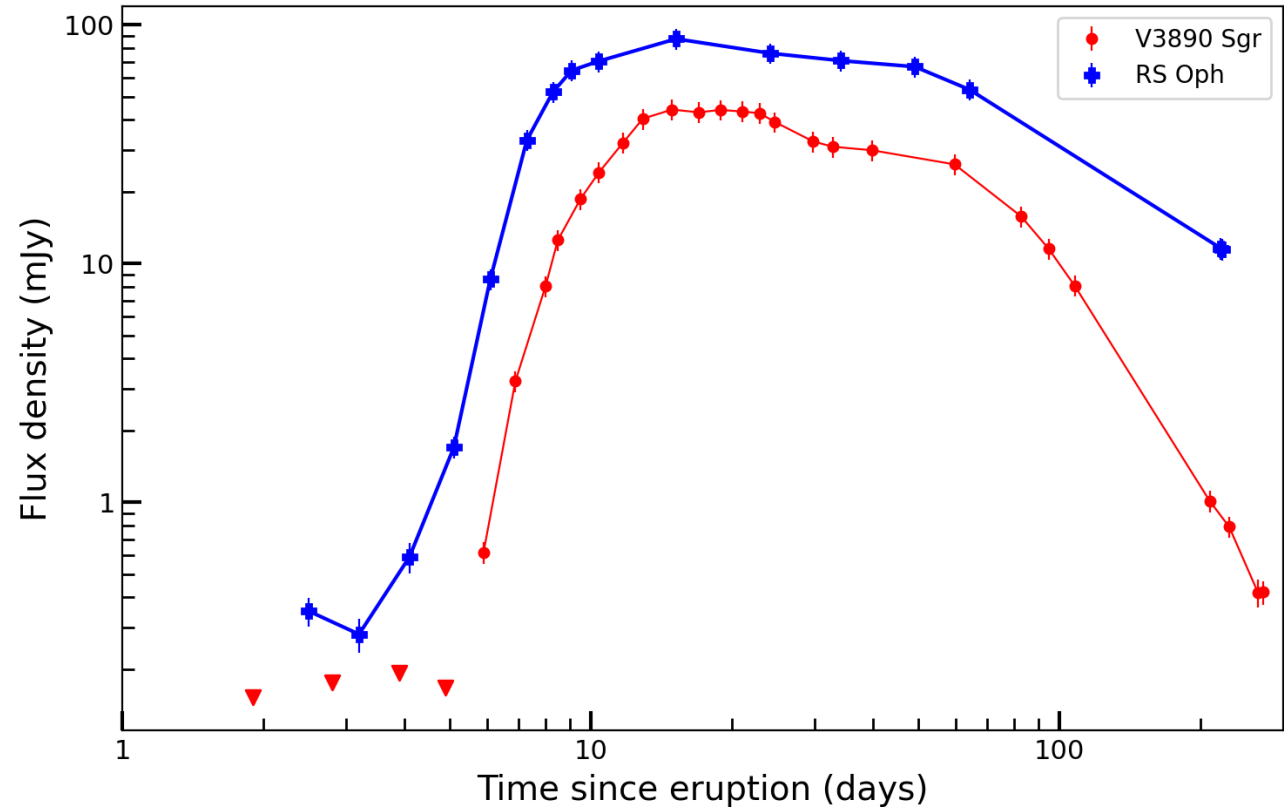
-Text format



Science case: RS Oph



Optical light curve

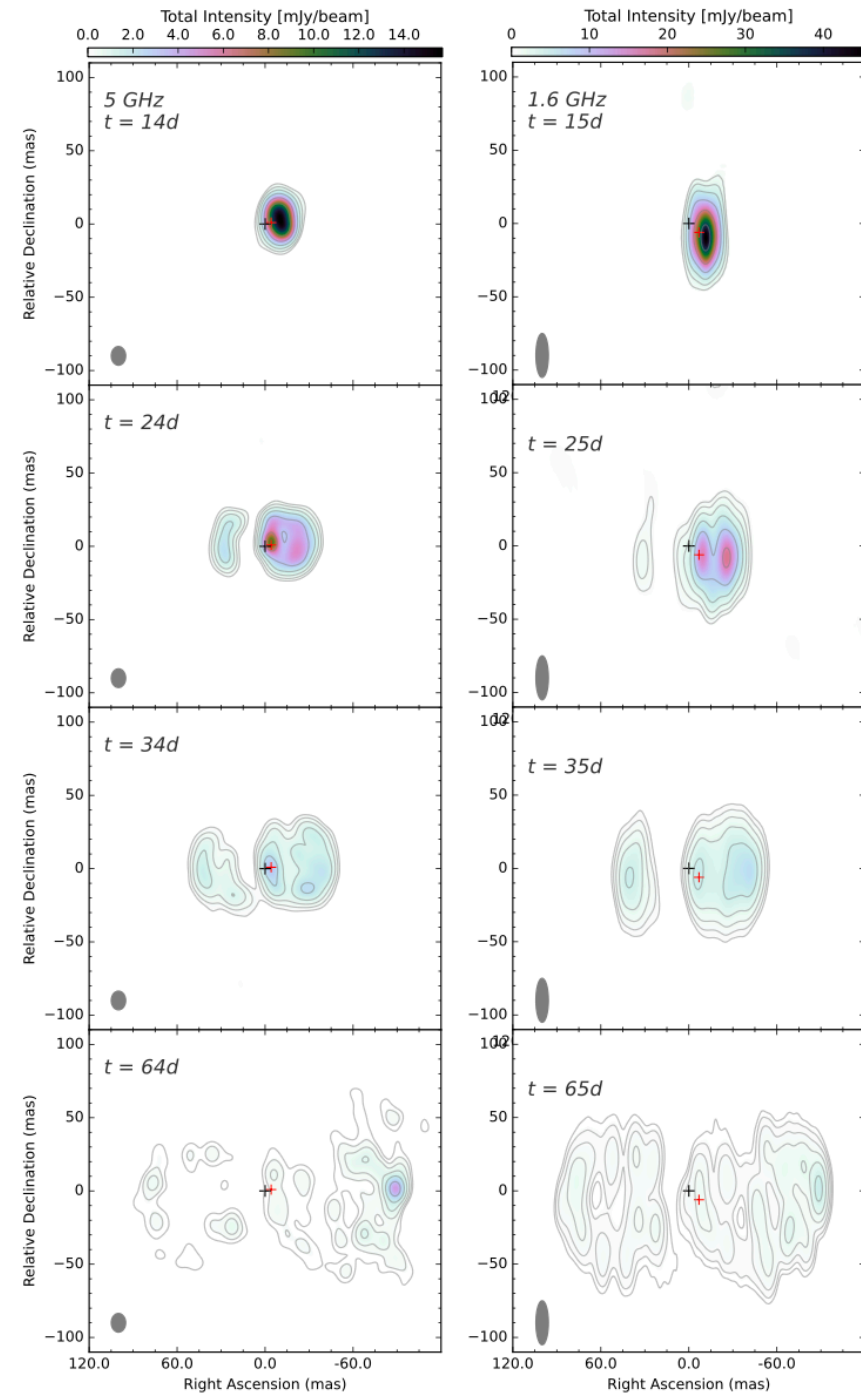


Radio light curve (de Ruiter et al., 2023)

Science case: RS Oph

- Source structure and evolution

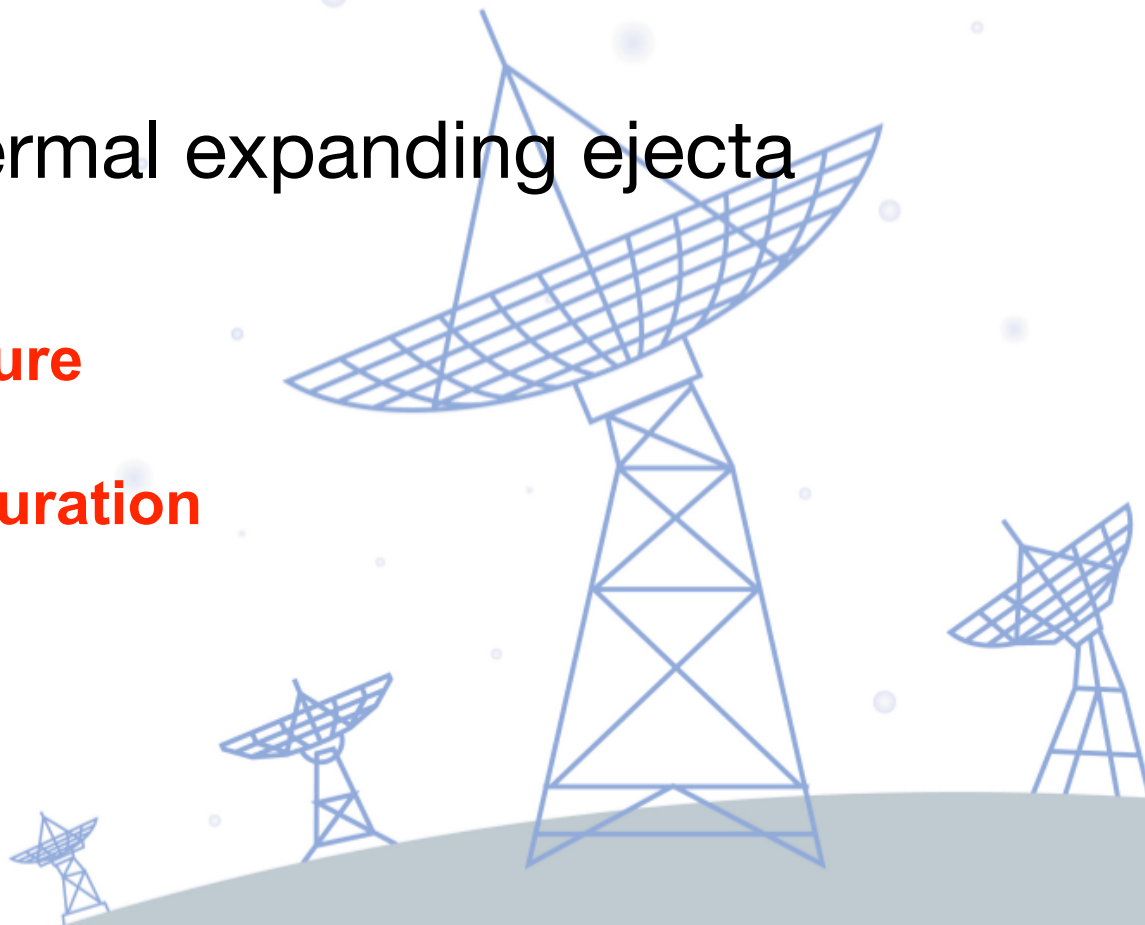
- 2006 and 2021 outburst, resolved in multiple components at 2 weeks and remained significantly bright up to 2 months (O'Brien et al., 2006, Lico et al., 2024)
- Observe similar targets 2 epochs < 3 weeks and 2 epochs, one at week 6 and final at week 8



Science case: RS Oph



- Why the EVN?
- Instrumental in imaging the non-thermal expanding ejecta
 - **Measure brightness temperature**
 - **Spectral indices**
 - **Determine geometrical configuration**
 - **(Expanding bipolar ejecta)**
 - **Outflow velocities**
 - **Properties of the orbital plane**



Technical justification



Regular and trigger proposal

RS Oph RA 17h50m13.1591485s Dec -06d42m28.48072979s

-Observations at 1.6 & 5 GHz from < 20 days and 60 days after the outburst (rapid evolution)

1.6 GHz

~80 mJy at day 15

- 10 hrs exposure time
- 6 microJy RMS
- High detection significance

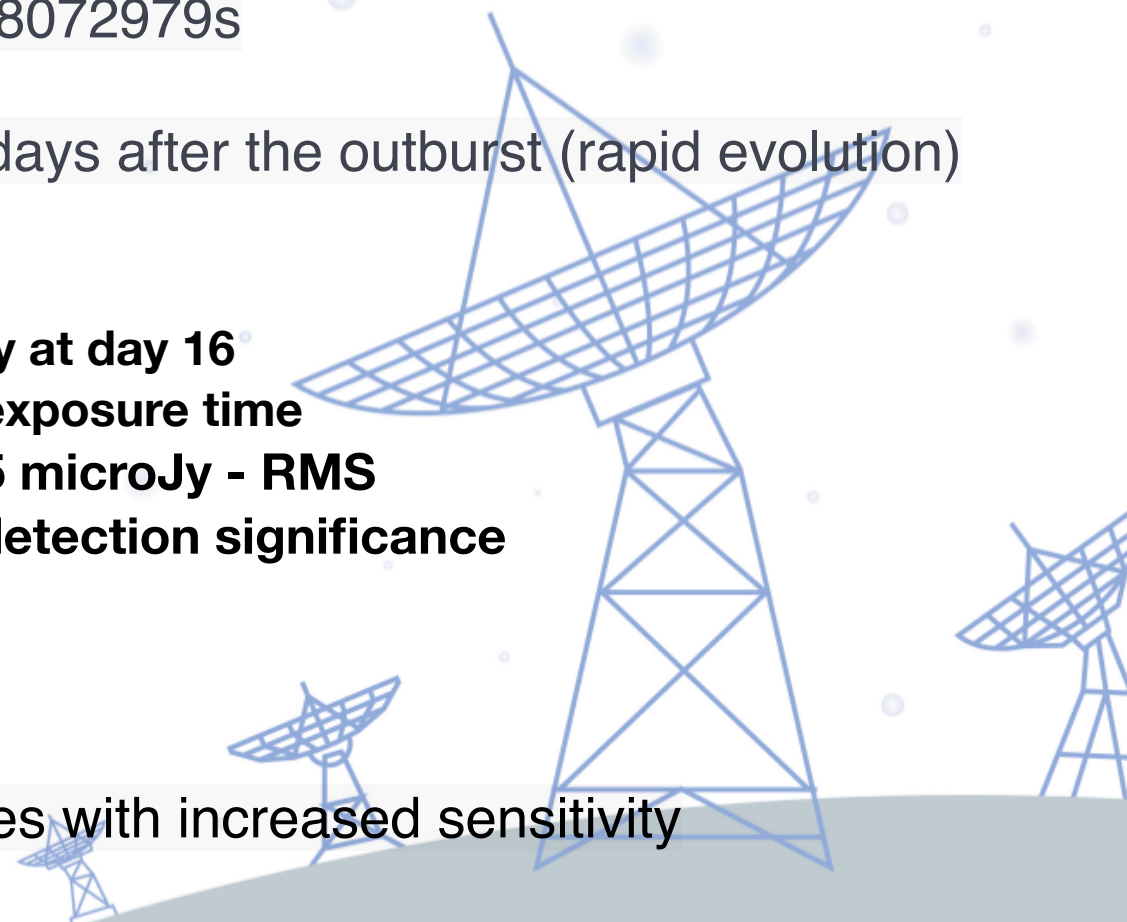
5 GHz

~42 mJy at day 16

- 10 hrs exposure time
- 5 microJy - RMS
- High detection significance

◆ Justify the request of e-MERLIN

- Radio continuum for extended structures with increased sensitivity
- Improve *UV* coverage



Technical justification



Trigger criteria (fit in either regular EVN or e-EVN)

- Science observations that are expected to become active radio in future
- The conditions for trigger e.g., radio flux density
- Flux densities in \sim several 10 mJy in the 10-30 days time range
- Spectral index is crucial- justifies observation at two bands



Submission of the proposal



Northstar submission tool

proposal.jive.eu

Link is provided on the call for proposals

Welcome to NorthStar
for EVN

EUROPEAN
VLBI
NETWORK

Username:

Password:

Log in

[Register as new user](#) [Password forgotten?](#) [Send Questions/Problems](#) [Help](#)

Submission of the proposal



Create a new proposal and make a distinction of the antennas that you will use. Some requires submission of separate proposal together with the EVN proposal.

A screenshot of the JIVE proposal submission web interface. The interface is white with blue accents. At the top left, there is a button with a document icon and the text "Read me first!". To its right is a button with a question mark icon and the text "Help". Below these buttons, the text "Telescopes : EVNandMERLIN eEVN GLOBAL" is displayed. Underneath, "Show under-review and reviewed proposals : Yes No" is shown, followed by the message "- Currently there are no proposals in preparation -". At the bottom center, there is a prominent button with a list icon and the text "Create new proposal". The background of the slide features faint, stylized illustrations of radio telescope dishes on a horizon line.

Submission of the proposal



-Add co-authors and their roles in the proposal



EVN Proposal



[? Help Index](#)

Community: **Everyone**
Category: **regular**
Semester: **26B**

[Applicants](#) | [Justification](#) | [Observing Request](#) | [Additional issues](#)

[? Help](#)

Active Participant	Contact Author	PI	Name	Affiliation	Country	Email	Potential Observer
yes	<input checked="" type="radio"/>	<input checked="" type="radio"/>	Dr Miriam M Nyamai	Joint Institute for VLBI ERIC (JIVE)	Netherlands	miriamnyamai@gmail.com	<input type="checkbox"/>

[Add applicant](#)

[Save and Continue](#) | [Save and Preview](#) | [Save and Exit](#) | [Save and Submit](#)

[Quit without saving](#)

Submission of the proposal

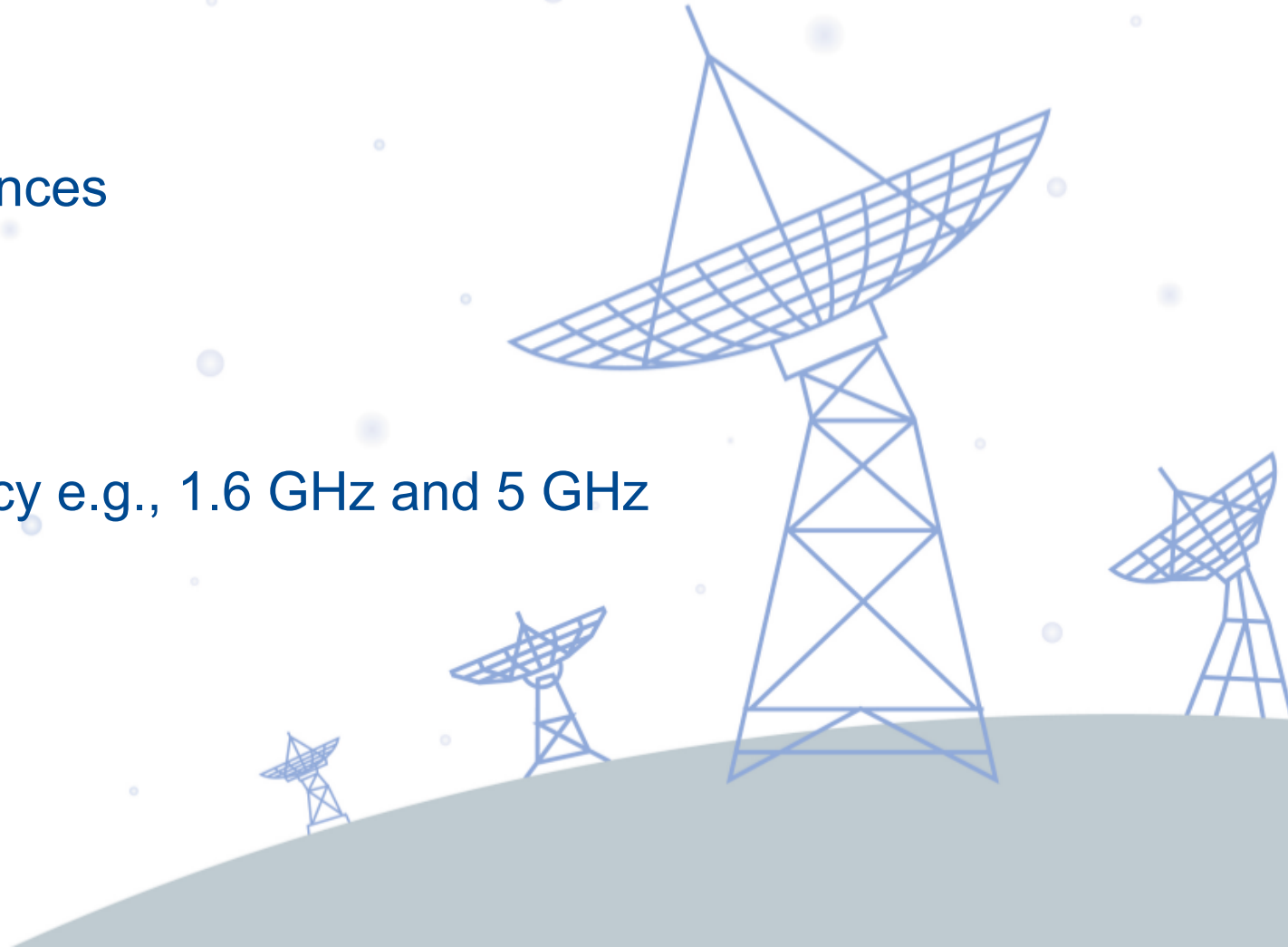


Justification

- Title and abstract
- Science background, figures and references

Observing request

- Fill for each specific observing frequency e.g., 1.6 GHz and 5 GHz
- Specify the trigger criteria



Thank you