



# Overview of major shower observations 2016-2017 by the BRAMS network

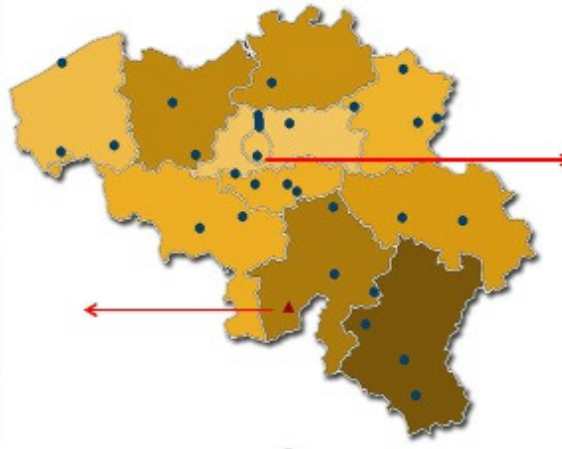
*Cis Verbeeck, Hervé Lamy, Stijn Calders,  
Cédric Tétard, Antonio Martínez Picar*



IMC 2017, Petnica, September 21-24, 2017

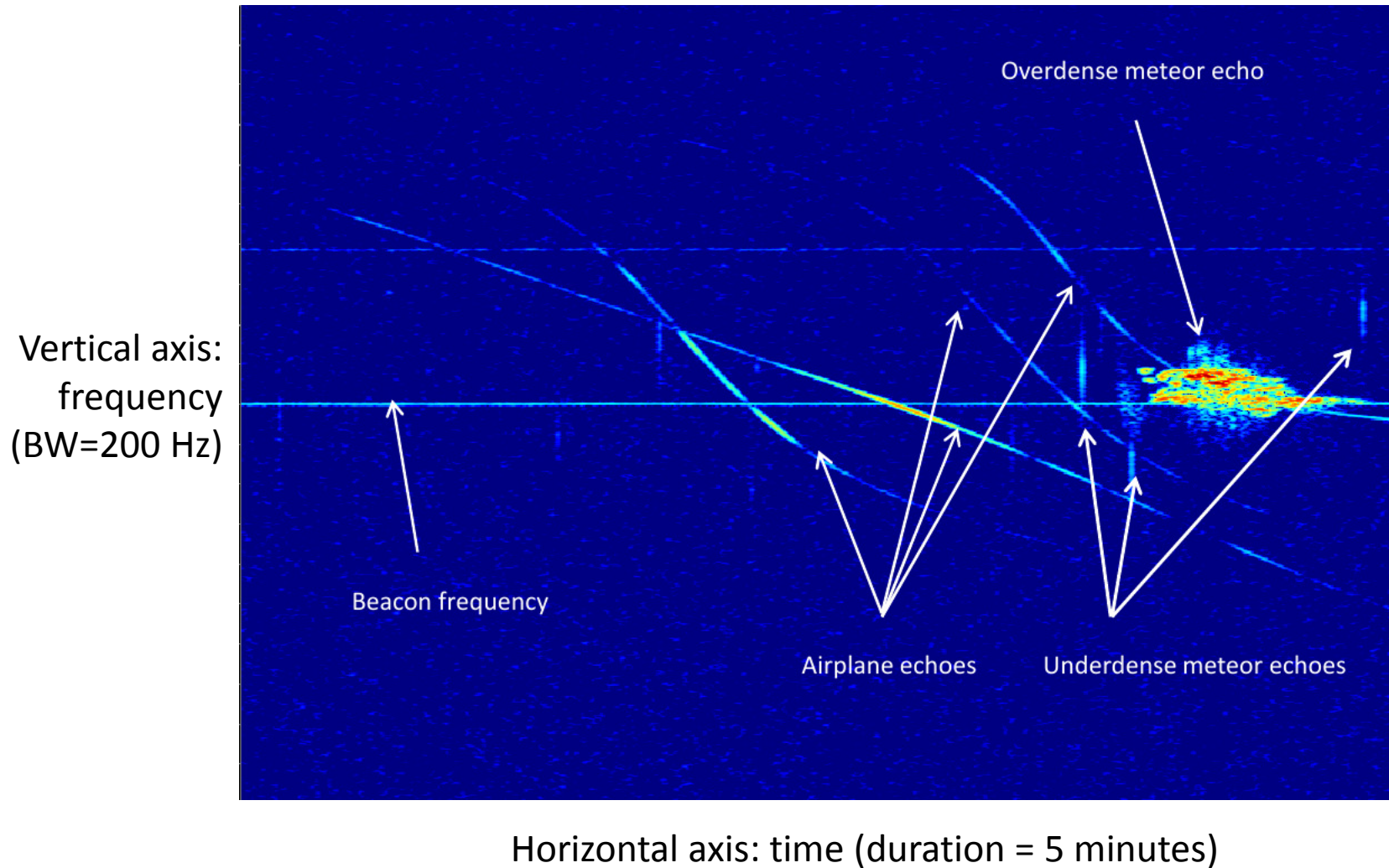


# BRAMS network



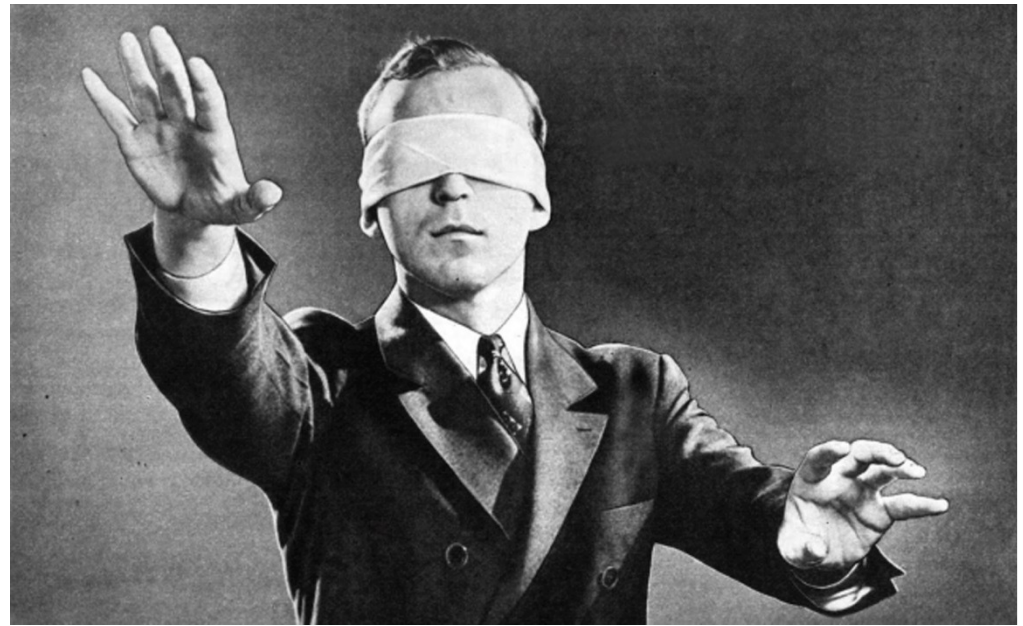
- One transmitter at Dourbes (left)
- Frequency: 49.970 MHz
- Power: 150 W
- 26 receiver stations in Belgium

# Spectrograms



# Why you didn't see BRAMS meteor activity plots yet...

- One spectrogram every 5 minutes
- 288 spectrograms per day
- Over a “spectrokilogram” for a few days of shower observations
- Too much to manually detect meteors in all spectrograms ourselves
- Automatic detection of meteors not yet up to the task



Radio Meteor Zoo — Zo X

Secure | <https://www.zooniverse.org/projects/zooniverse/radio-meteor-zoo>

PROJECTS ABOUT GET INVOLVED TALK BUILD A PROJECT NEWS SIGN IN REGISTER

RADIO METEOR ZOO ABOUT CLASSIFY TALK COLLECT PROJECT WEBSITE RESULTS

UPDATE : More detailed results of the Perseids 2017 are available in the [Results](#) section. These results will be presented next week during international conferences.

We have started uploading background data for the stations BEOTTI and BEOVER.

For new users please visit the [FAQ](#) and the recently added Field Guide if you need help to analyze images.

Thank you for your constant support!

## Help us identify meteors in radio data

[Learn more](#) [Get started](#)

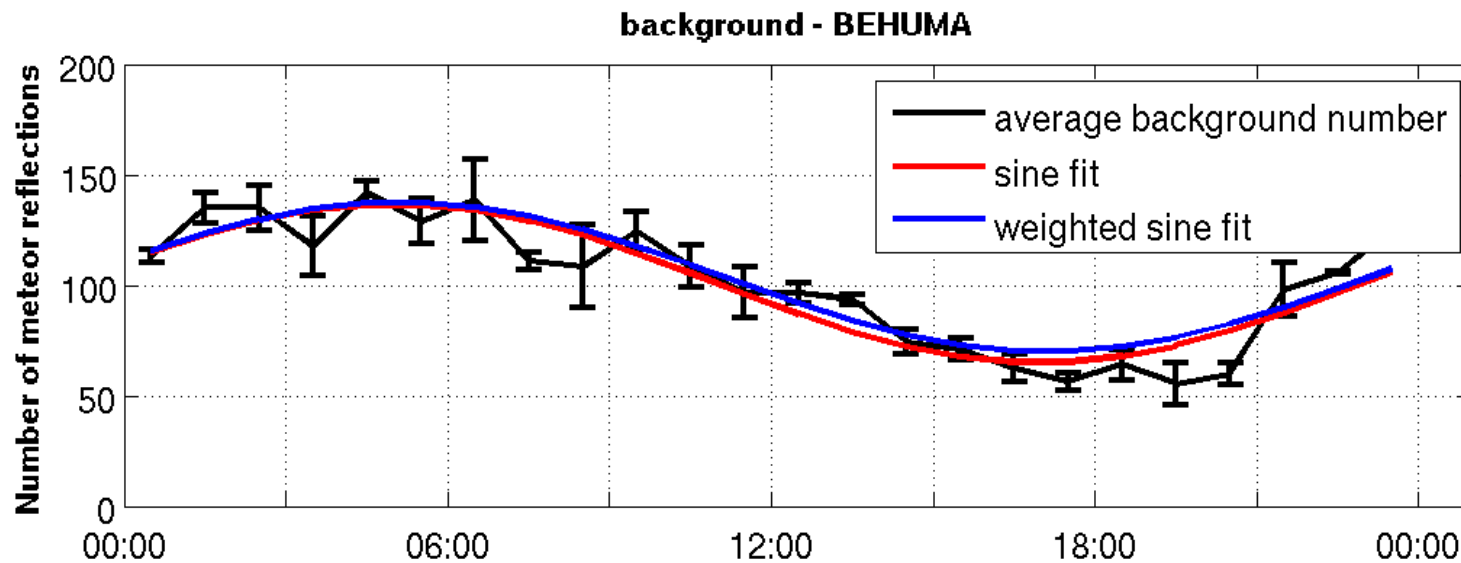
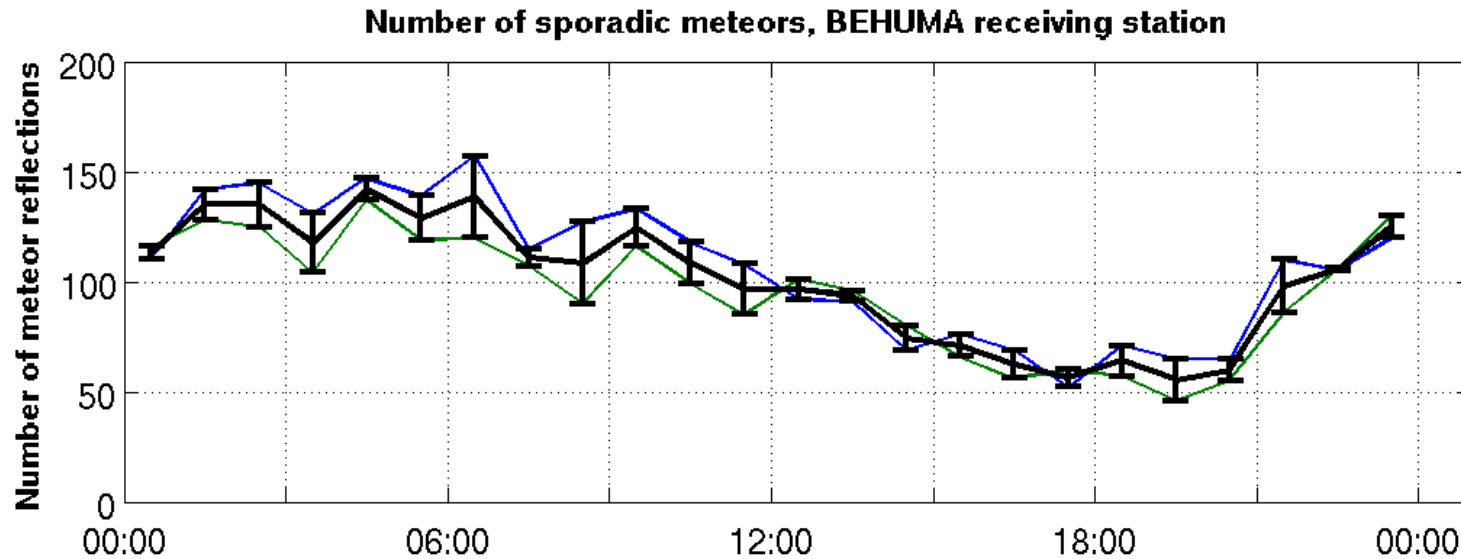
1 person is talking about **Radio Meteor Zoo** right now.

[Join in](#)

Windows taskbar: 1:41 PM 18-Sep-17

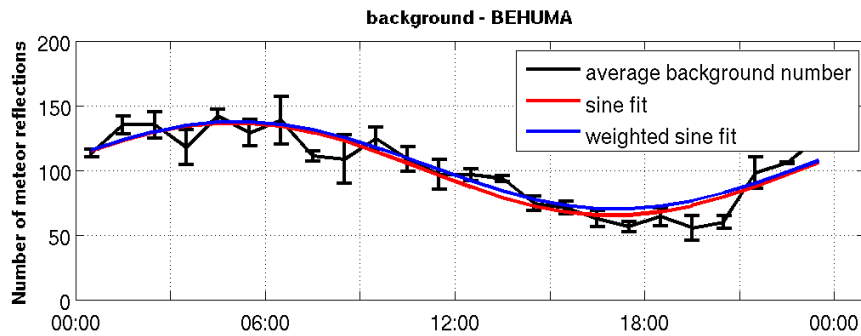
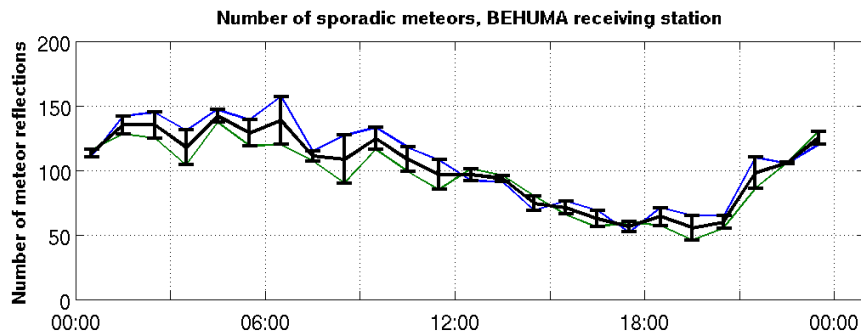
<https://www.zooniverse.org/projects/zooniverse/radio-meteor-zoo>

# Perseids 2016, Humain: sporadic background

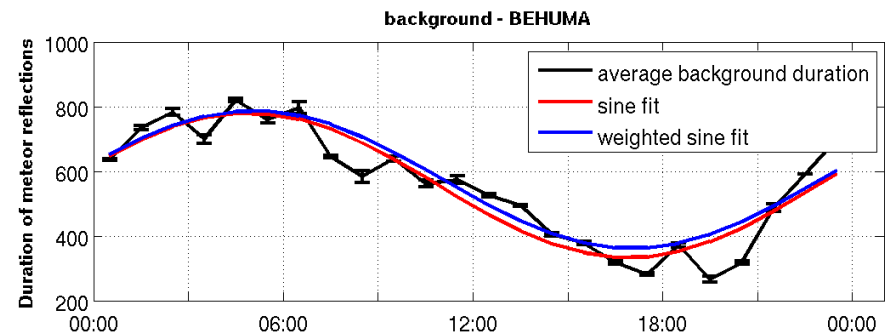
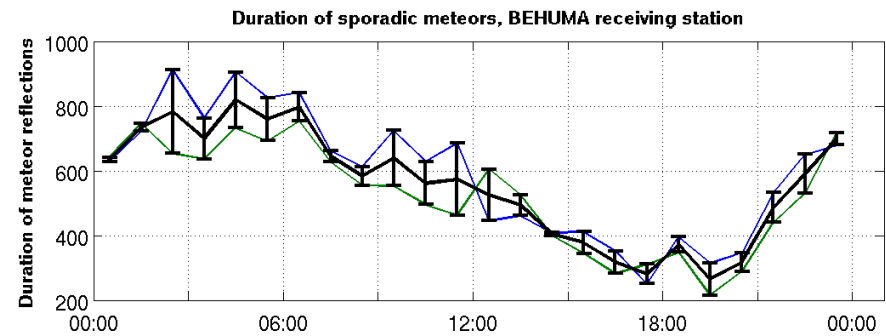


# Perseids 2016, Humain: sporadic background

## Number of meteor reflections

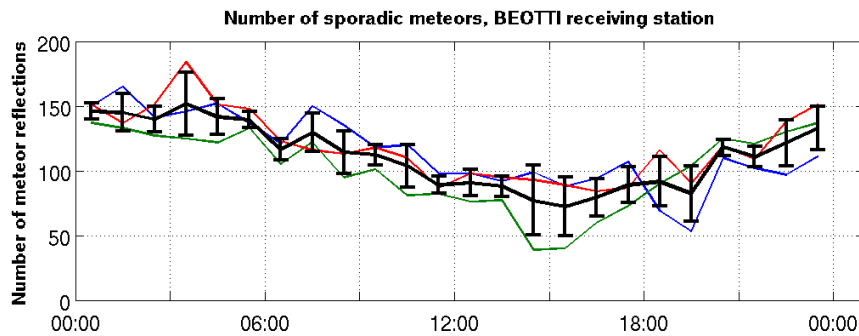


## Total duration of meteor reflections

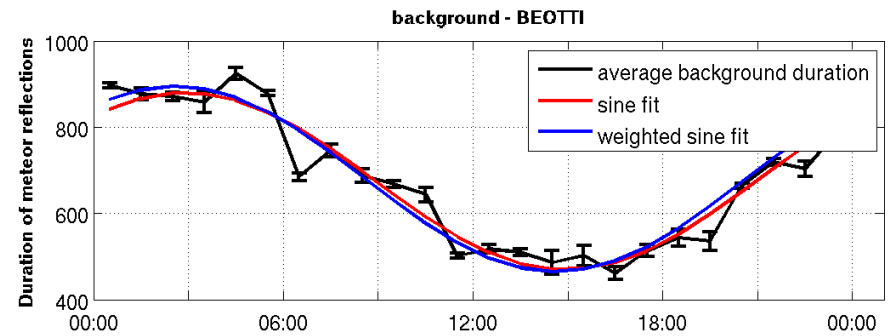
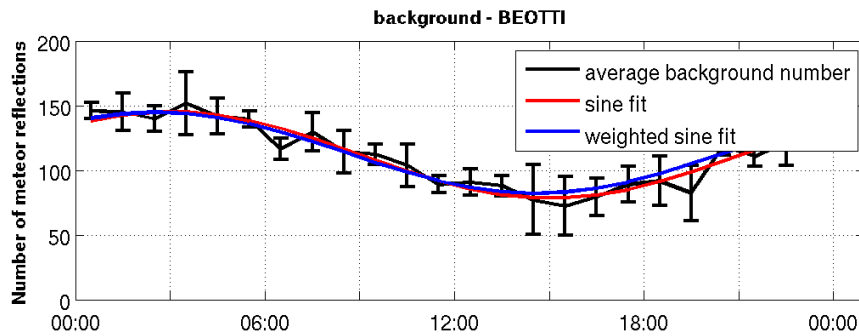
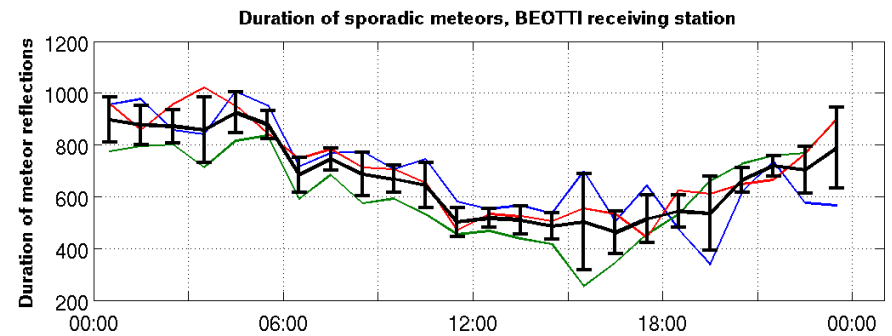


# Perseids 2016, Ottignies: sporadic background

Number of meteor reflections



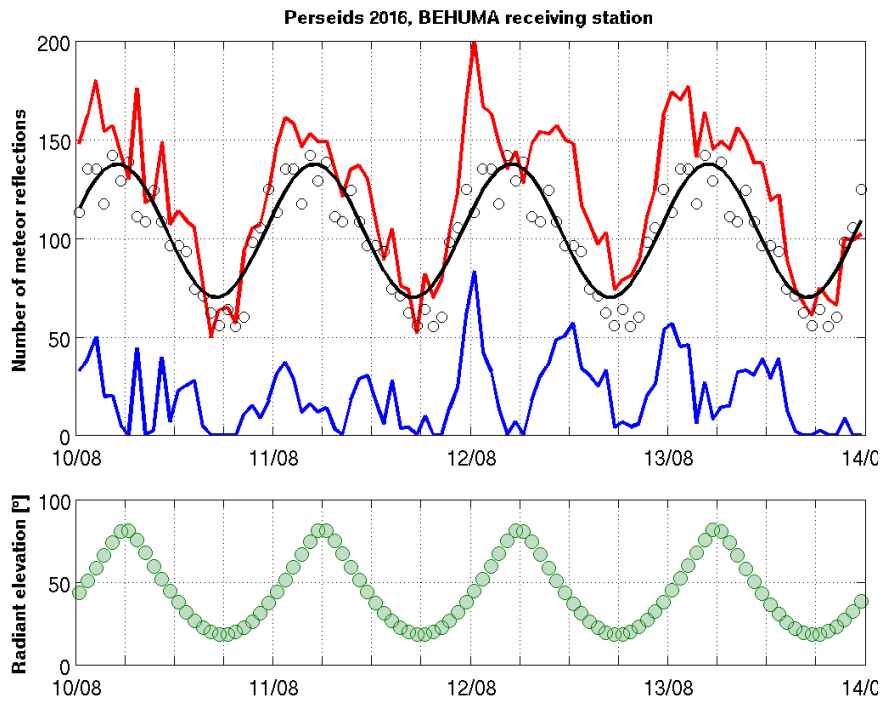
Total duration of meteor reflections



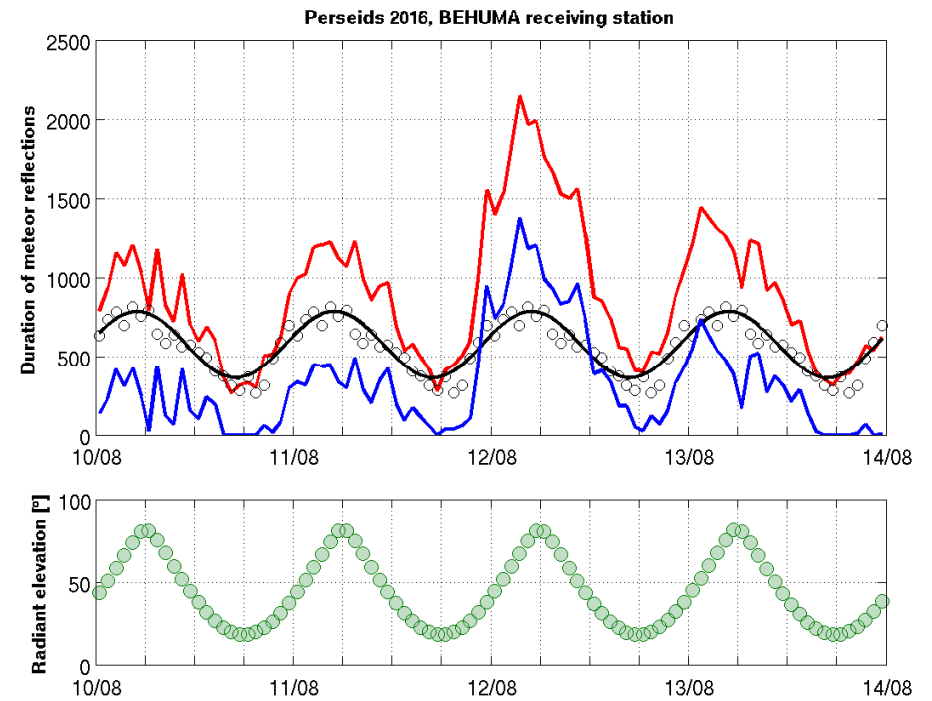


# Perseids 2016, Humain

Number of meteor reflections

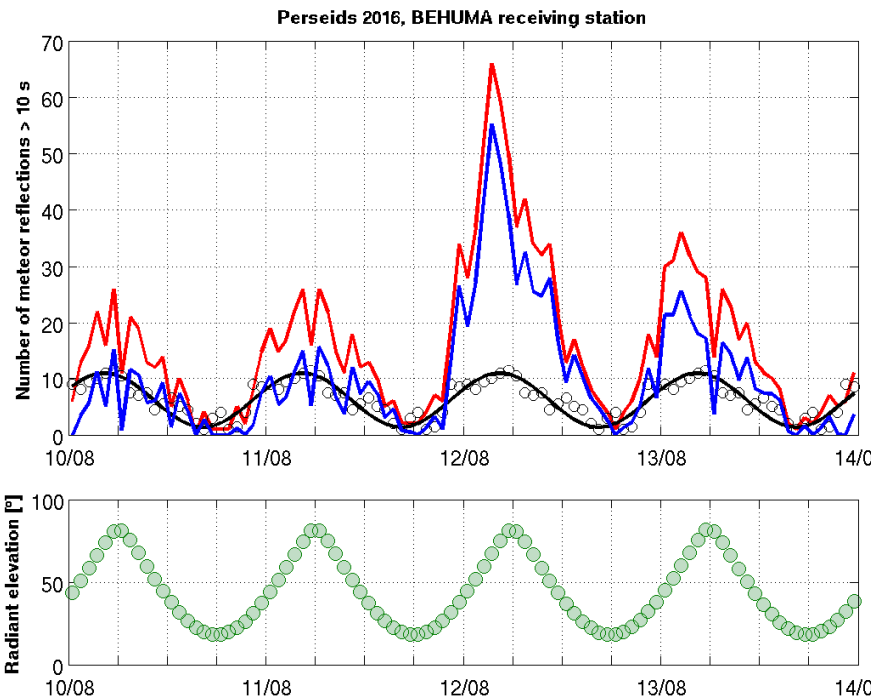


Total duration of meteor reflections

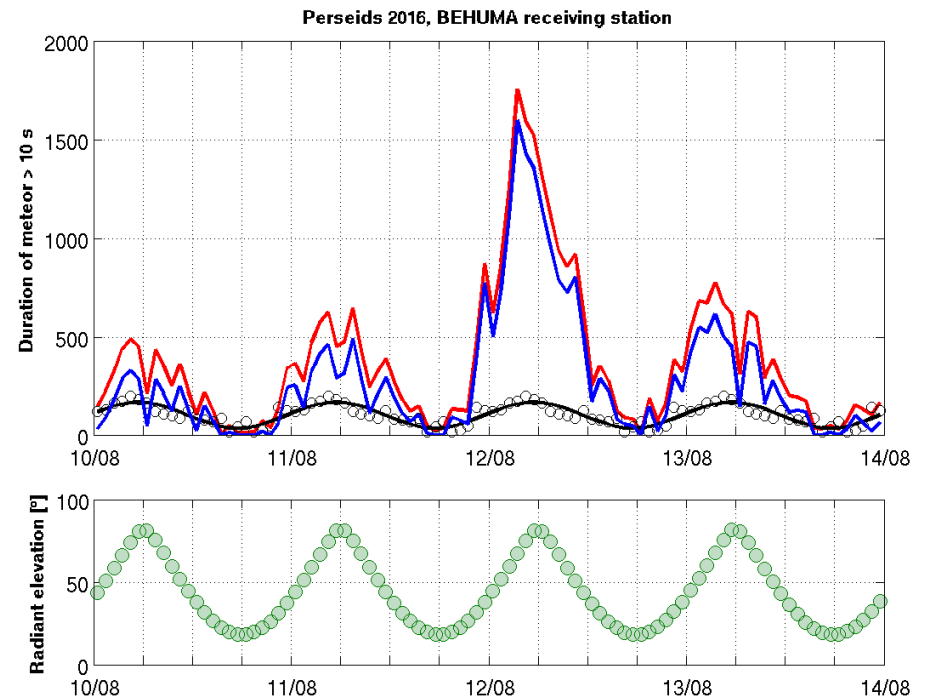


# Perseids 2016, Humain

Number of meteor reflections > 10 s

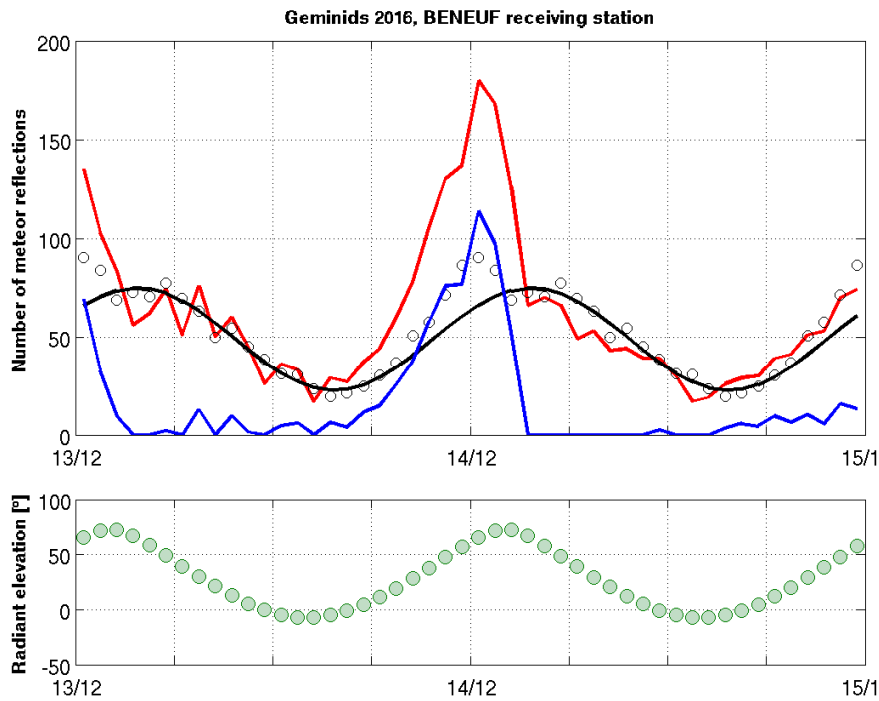


Total duration of meteor reflections > 10 s

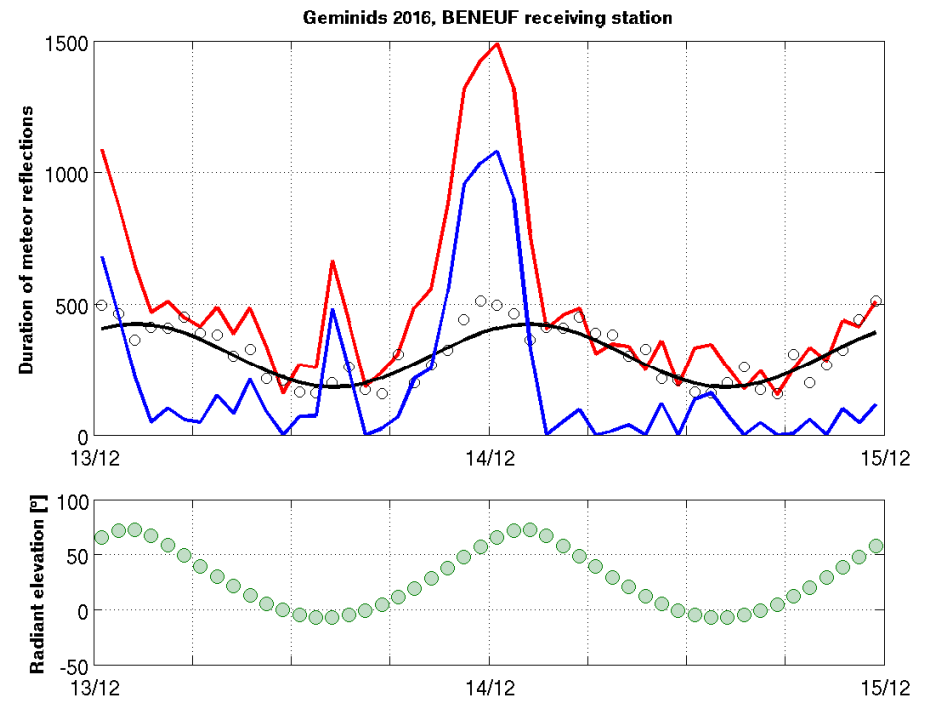


# Geminids 2016, Neufchâteau

Number of meteor reflections



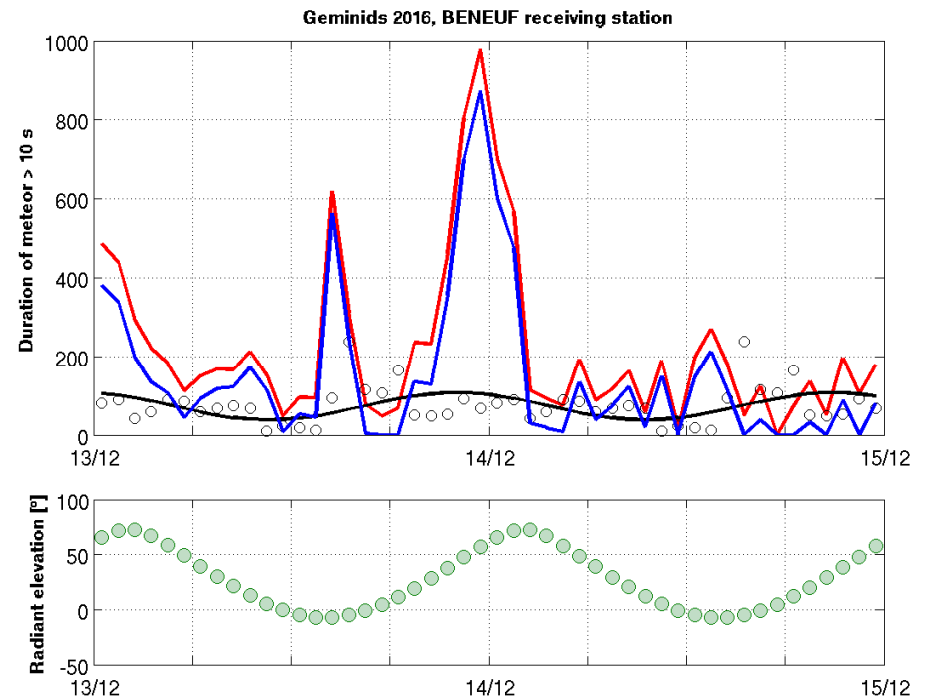
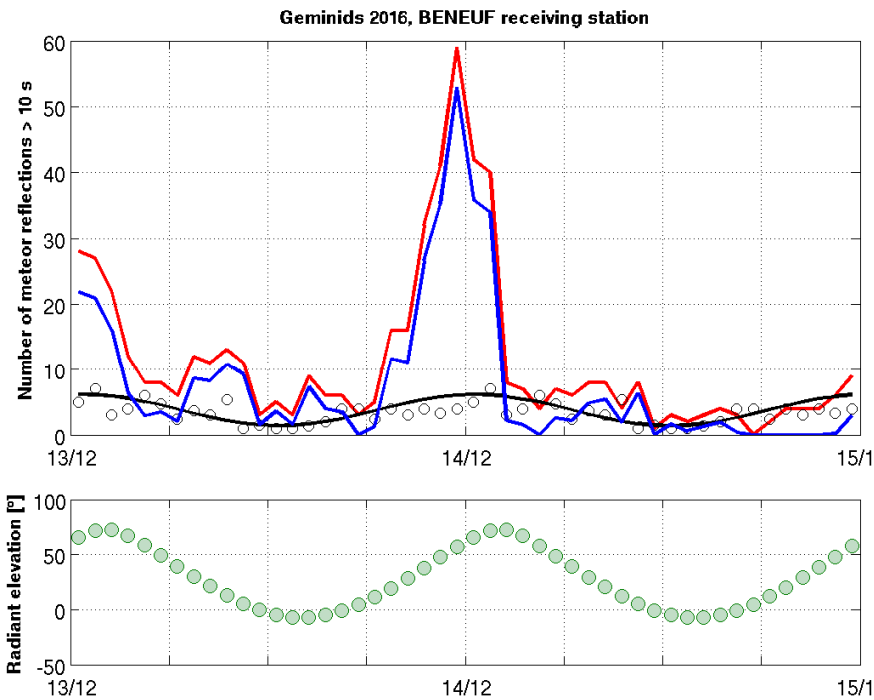
Total duration of meteor reflections



# Geminids 2016, Neufchâteau

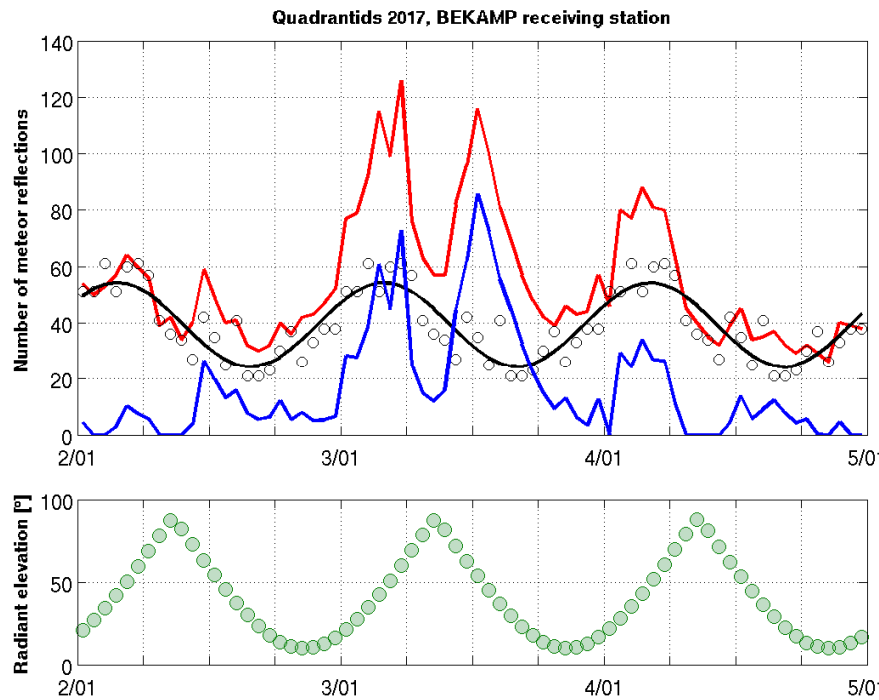
Number of meteor reflections > 10 s

Total duration of meteor reflections > 10 s

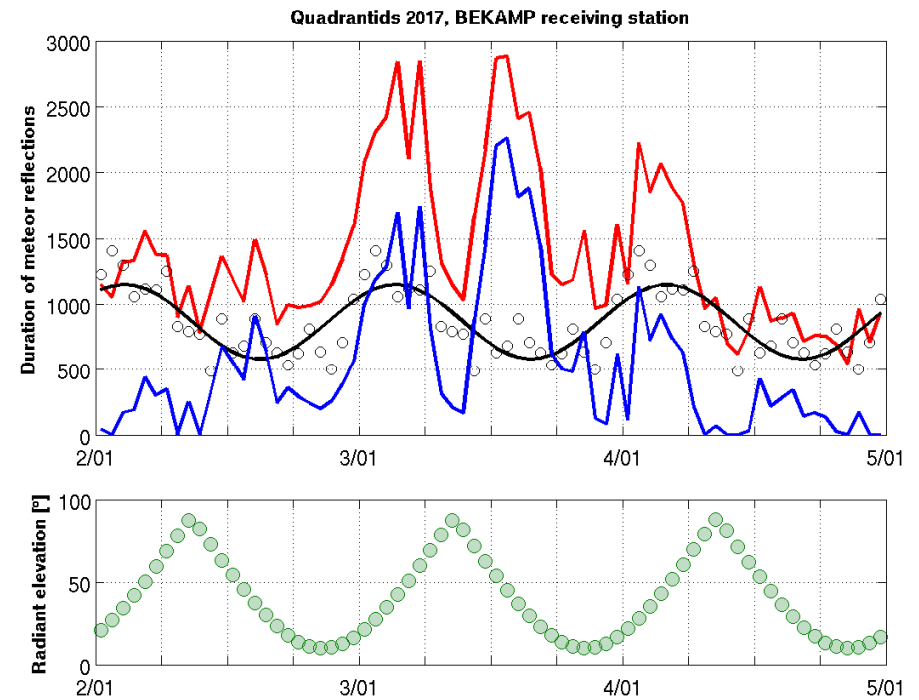


# Quadrantids 2017, Kampenhout

Number of meteor reflections

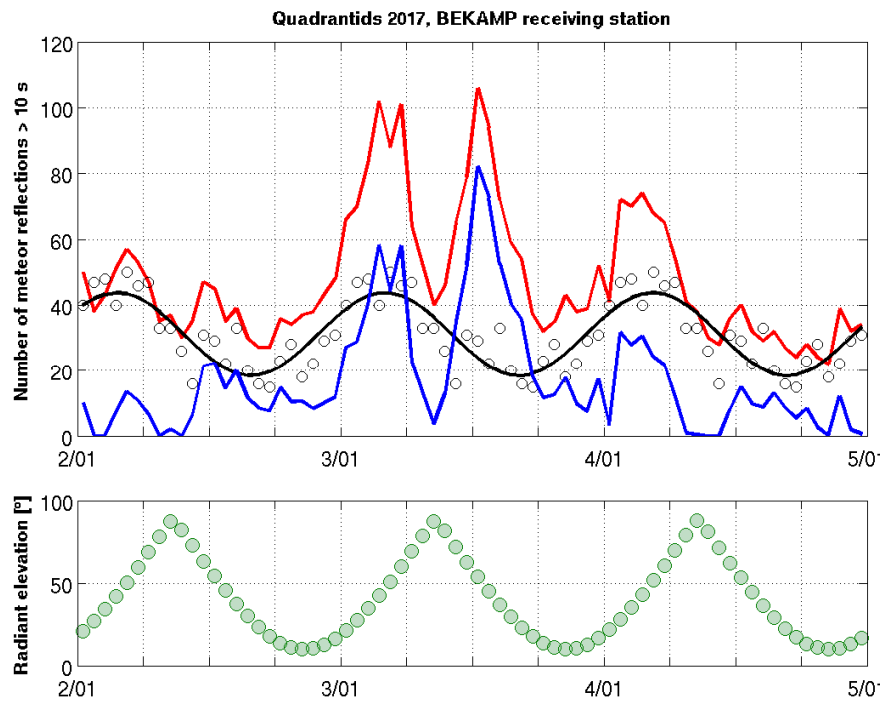


Total duration of meteor reflections

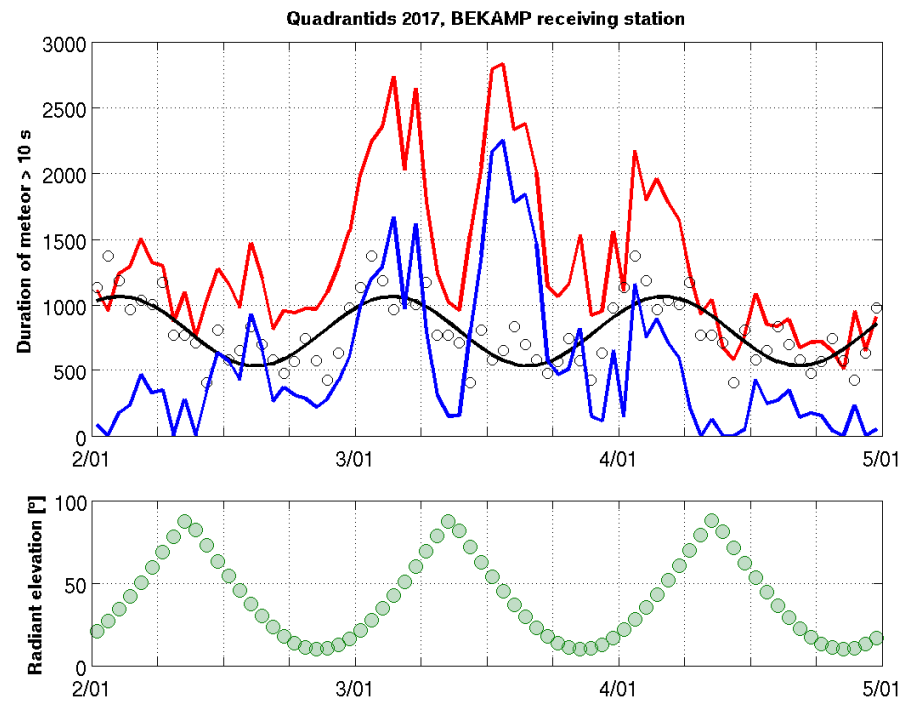


# Quadrantids 2017, Kampenhout

Number of meteor reflections > 10 s

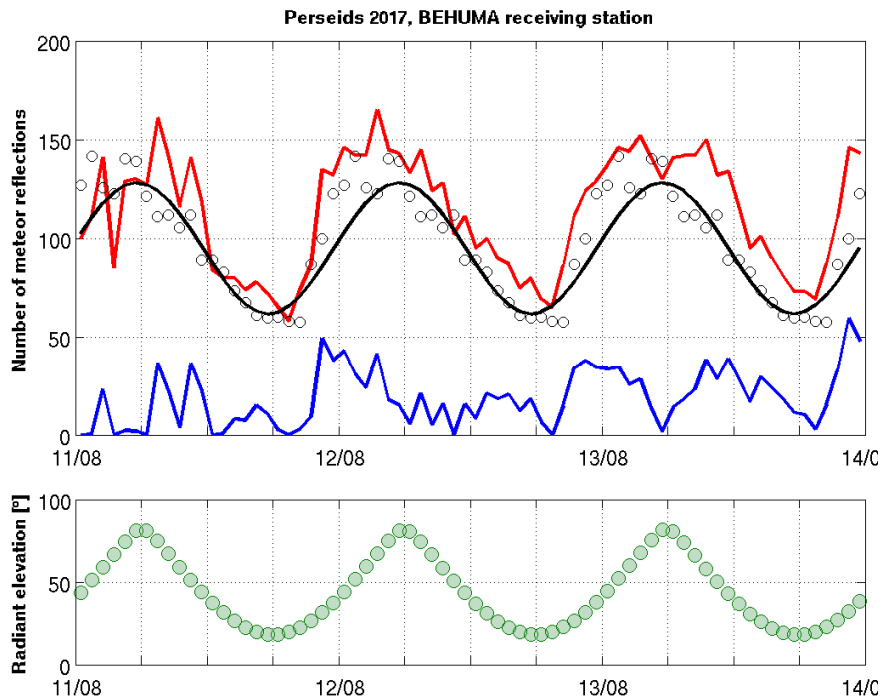


Total duration of meteor reflections > 10 s

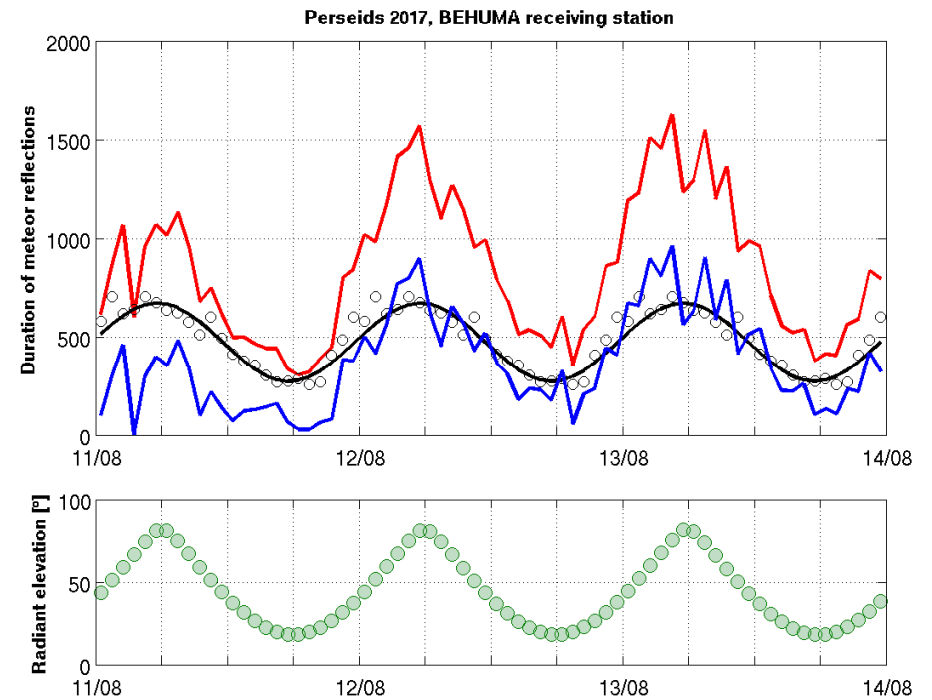


# Perseids 2017, Humain

Number of meteor reflections

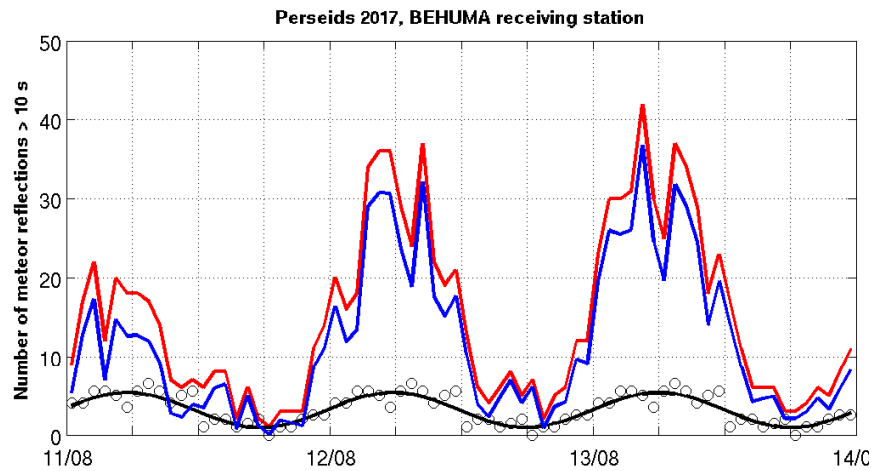


Total duration of meteor reflections

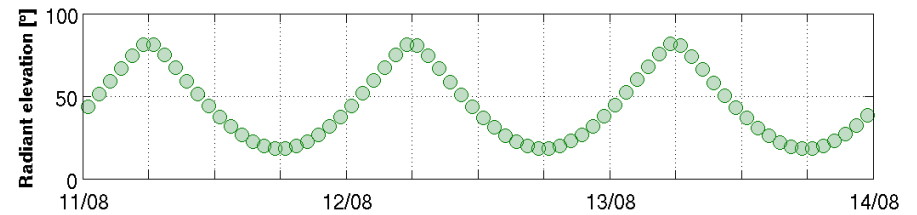
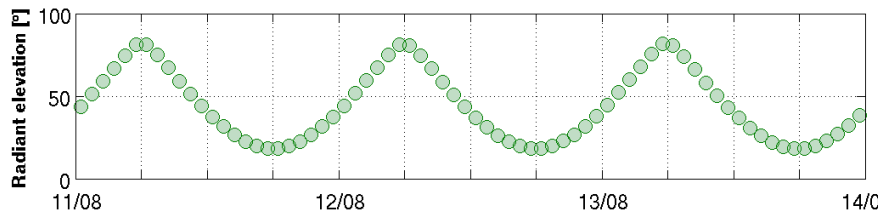
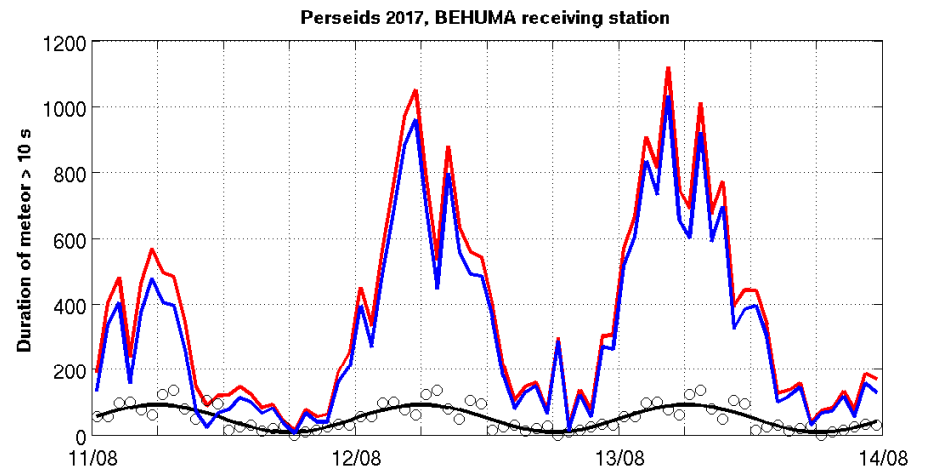


# Perseids 2017, Humain

Number of meteor reflections > 10 s



Total duration of meteor reflections > 10 s





# Conclusions

- The BRAMS team has established a consistent method to estimate the sporadic background and subtract it from the total activity to obtain shower activity.
- Most showers are overwhelmed by the many faint sporadic meteors. Showers stand out better when considering only long duration reflections.
- The resulting shower rates have to be corrected for the sensitivity of the setup (Observability Function), which is highly dependent on radiant-setup geometry and antenna gains.

# Near future

- Observability Function code expected to be ready end 2017
- What may it bring?

