

DOMESTIC CAT CHRONOBIOLOGY: DIURNAL, LUNAR AND SEASONAL RHYTHMS

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Background

- Domestic cat (*Felis silvestris catus*): high proportion of stray/feral individuals
- Impact (considered negative) on wildlife – opportunistic predator
- Although ... the role of the domestic cat cannot simply be considered unidirectional
- Heated debate (total control/exclusive indoors vs. animal welfare)
- Consensus ... management to reduce negative impact on wildlife and promote animal welfare
- Knowledge of rhythm, activity, behaviour ... prerequisite for best management practise

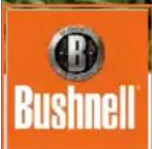
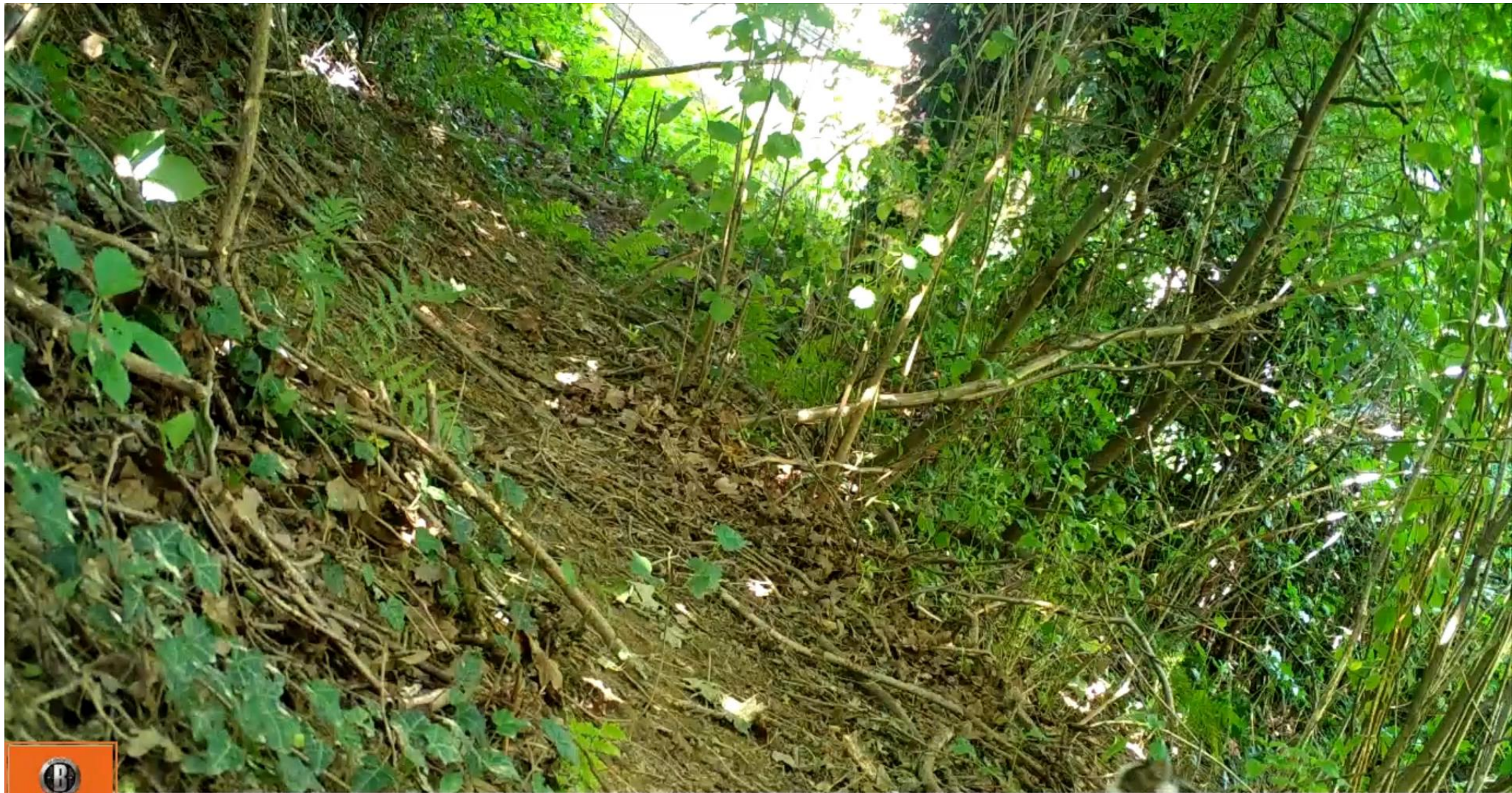
Aim

- Chronobiological parameters - timing and frequency of occurrence and activity of the domestic cat
- How (if at all) their activity is influenced by the circadian and lunar cycles, and the season.
- We hypothesised that:
 - i) general cat activity is highest during nighttime hours
 - ii) cats are most active in the spring (mating season)
 - iii) cats are more active during the new moon (the darker moon phase)

Material and methods

- Trail cam
- **2 years**
- Wildlife corridor (roedeer, hare, jackal, fox, birds, mustelids, etc.)
- **Domestic cats' appearance and activity:**
 - date and time of observation,
 - **part of the day,**
 - duration of the detention,
 - **number of visible animals,**
 - sex of the animal,
 - **type of activity/behaviour of the animal,**
 - daylight/darkness,
 - **whether the individual occurs in pairs,**
 - presence of prey.
- Circular and basic statistics





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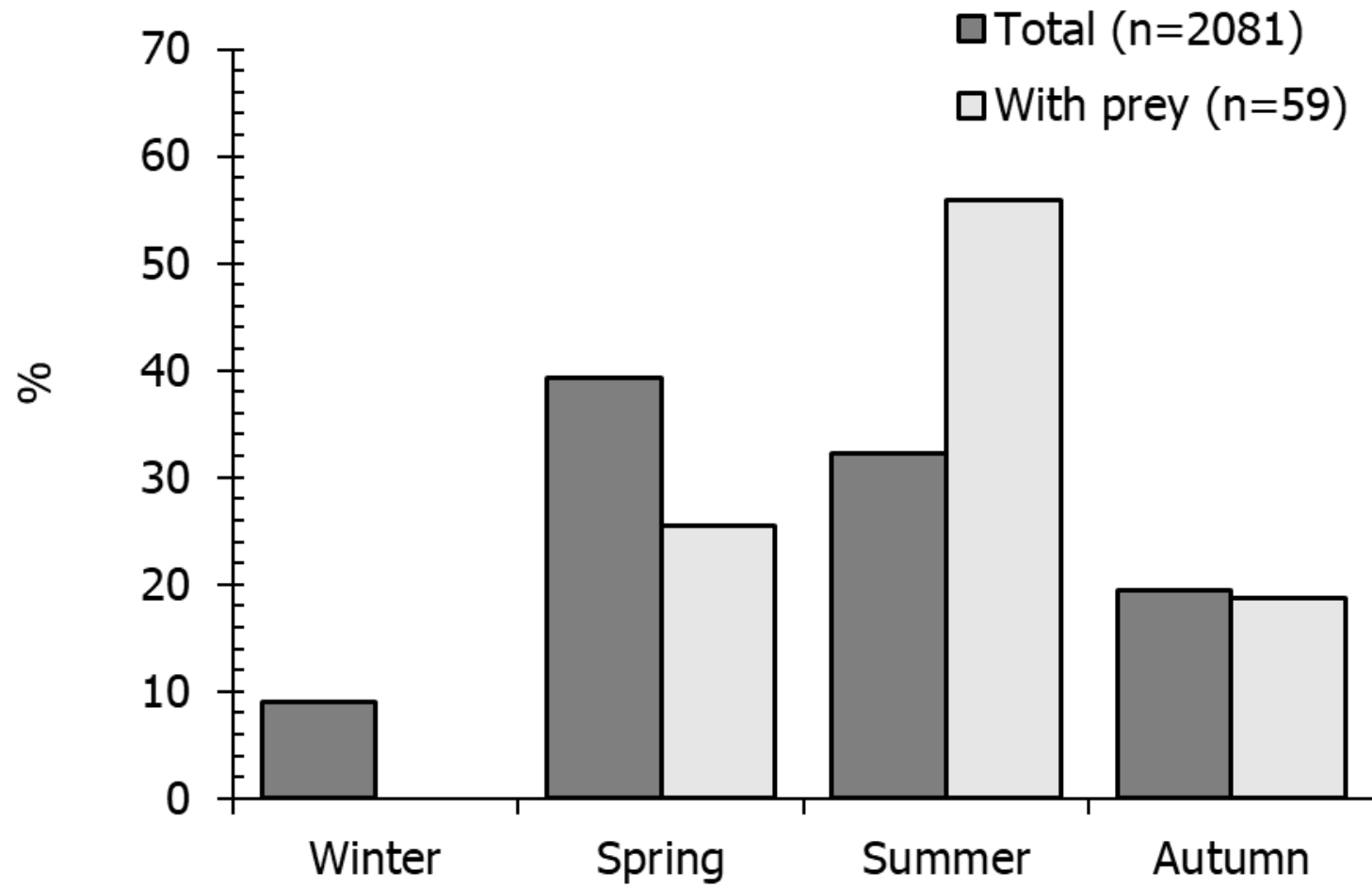


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Results

SEASONAL

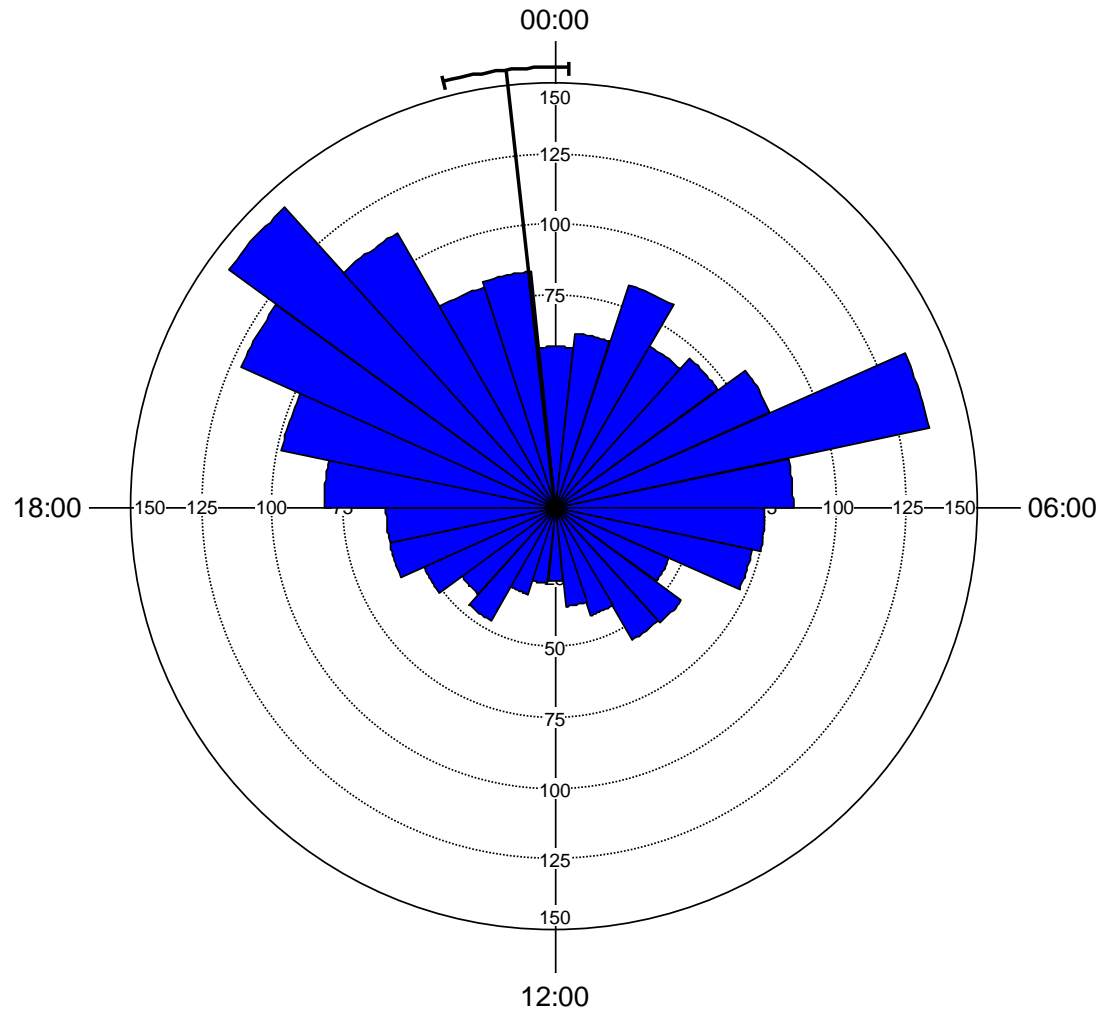


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Results

CIRCADIAN

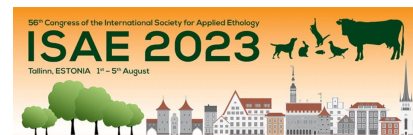


Further analysis showed that the occurrence with prey corresponds to a general diurnal pattern.



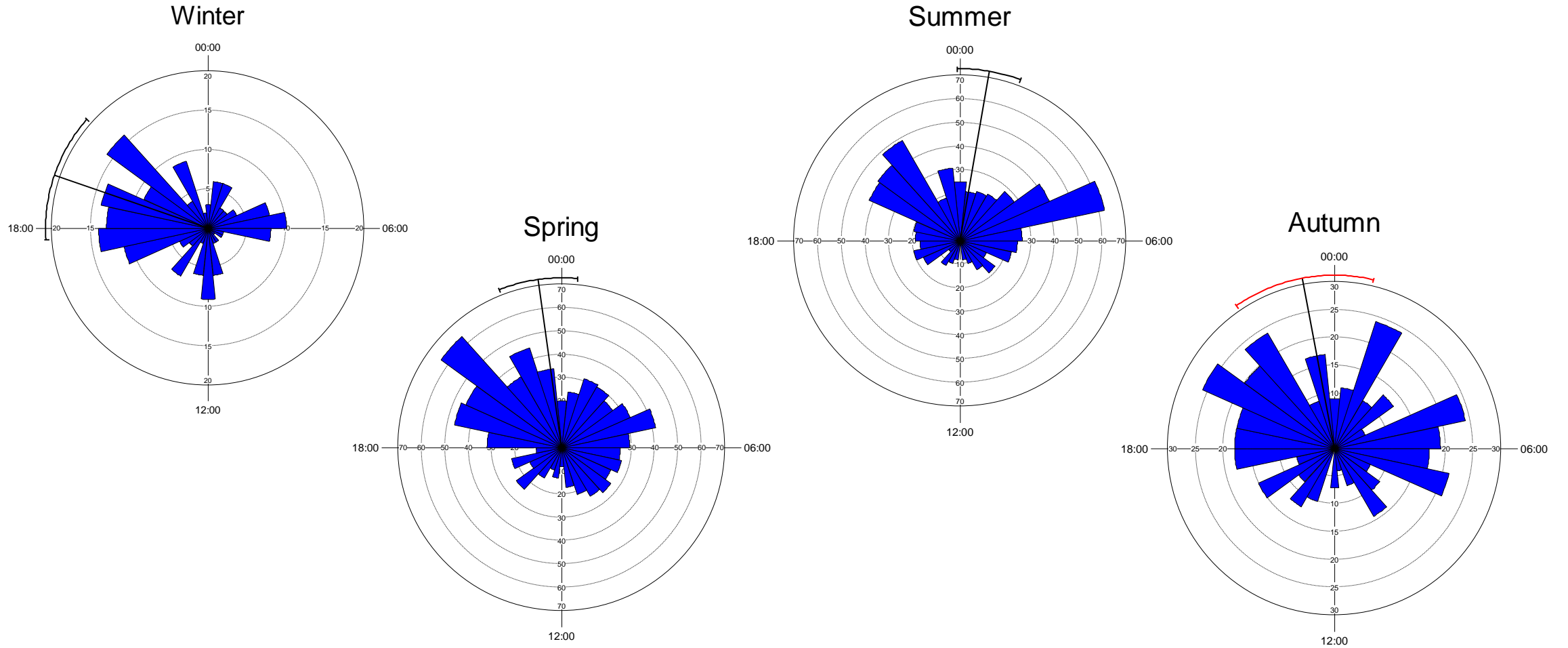
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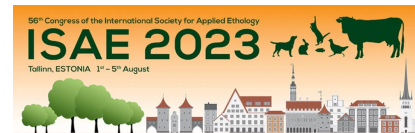


Results

CIRCADIAN×SEASON



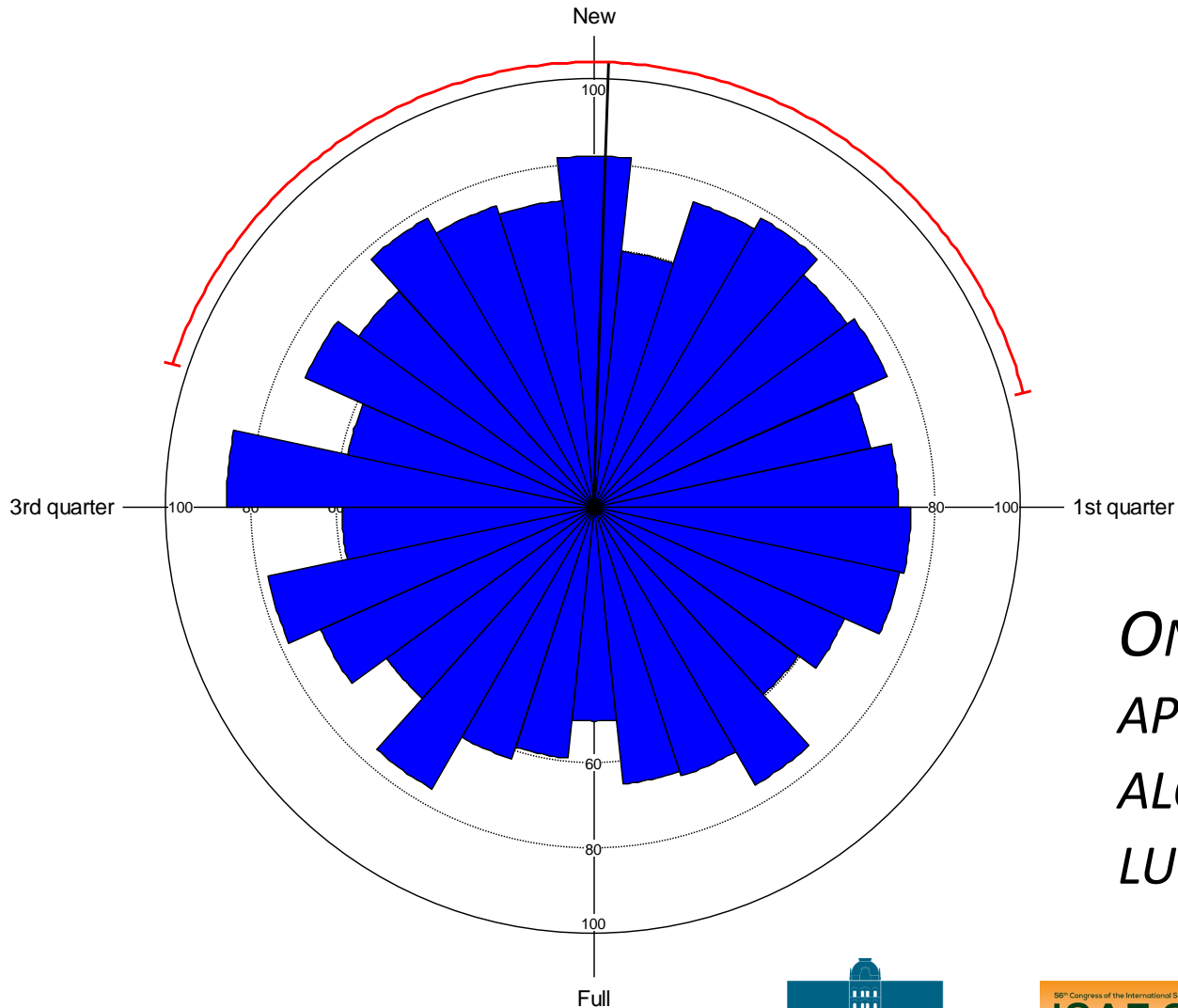
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Results

LUNAR

Lunar (total)



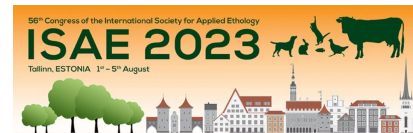
The occurrence with prey is even more scattered over the lunar cycle.

ONGOING ANALYSES SHOW THAT THE RESULTS APPEAR TO BE DIFFERENT WHEN NIGHT ACTIVITY ALONE IS CONSIDERED IN THE CONTEXT OF THE LUNAR CYCLE.



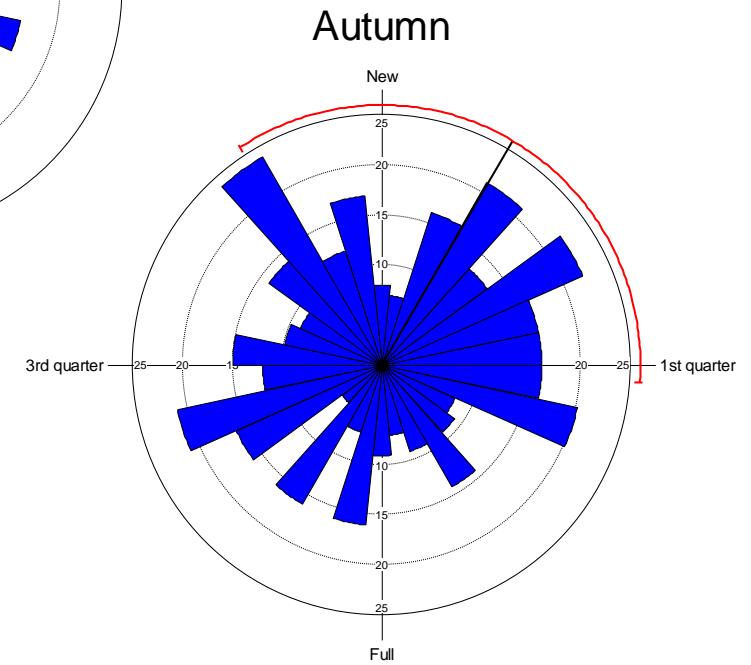
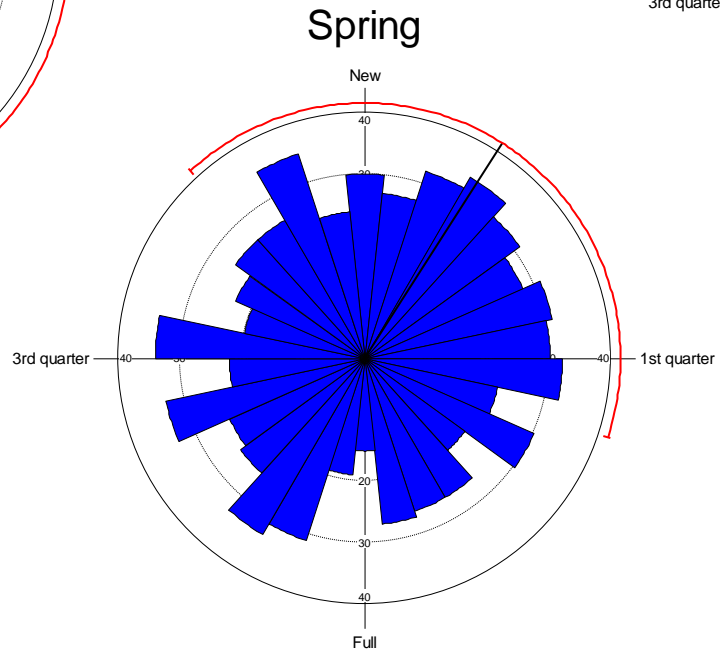
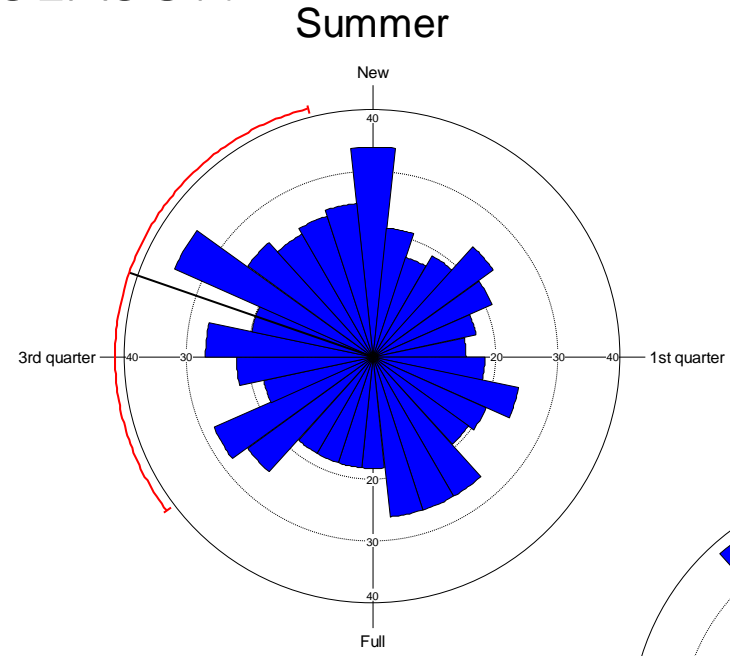
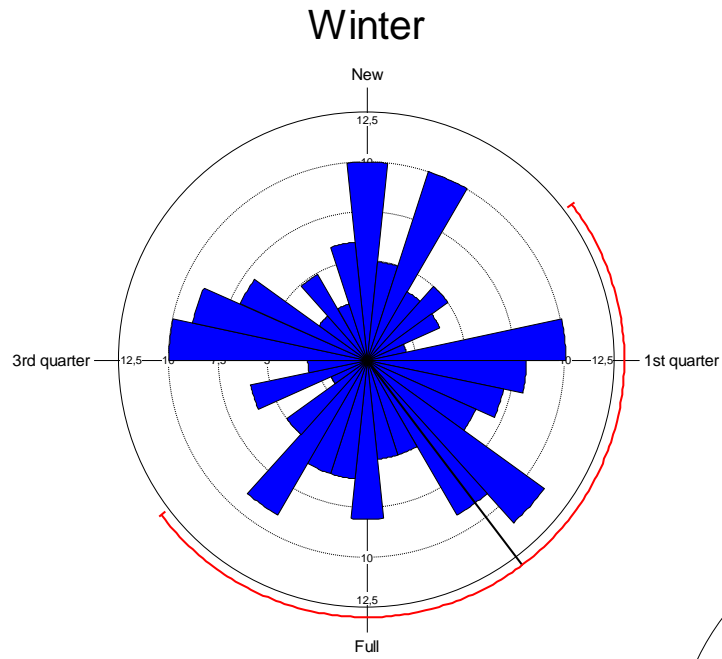
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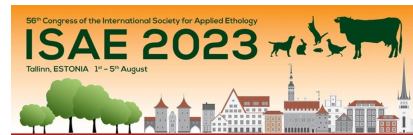
Results

LUNAR×SEASON



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Conclusions

- Bimodal/diurnal circadian activity (late evening, early morning; except in winter)
- In general, no significant influence of the lunar cycle (i.e. when both daily and nocturnal activity are considered together) - tendency towards more activity at new moon
- Highest activity in spring (with prey in summer) – steady decrease towards winter
- OPTIMAL MANAGEMENT?

STAY TUNED!

Manuscript in preparation.

Will be published on a larger scale – hopefully before the end of the year :)



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Thank you!

