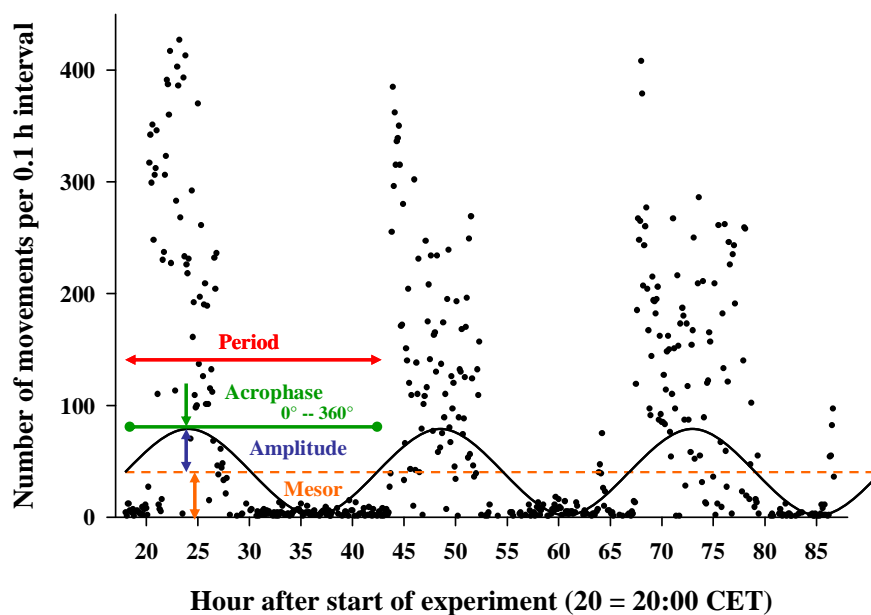


Electronic Appendix 2

Cosinor analysis (cf. Nelson *et al.* 1979)

Circadian rhythmicity of the intensity of locomotor activity was validated by performing cosinor tests within a period range of 20 to 28 h, using the program COSINOR provided by the Circadian Rhythm Laboratory, Walterboro, USA (<http://www.circadian.org/software.html>). The intensity of locomotor activity was derived from the number of captured images (equivalent to the number of body movements) within fixed 0.1 hour intervals. Individual variation of circadian rhythms was estimated by calculating period, acrophase (phase angle), amplitude and mesor (see figure). Cosinor analysis confirmed statistically significant circadian rhythms in 15 individual redstarts (see table below).



Indiv.	Period (h)	Acrophase (degree)	Amplitude (count)	Mesor (count)	F	p
1	20.5	104	38.6	25.6	47.9	< 0.001
2	23.9	98	90.8	52.7	147.2	< 0.001
3	24.5	98	68.4	37	119	< 0.001
4	21.5	103	36	24.4	47.1	< 0.001
5	21.7	103	60	32.8	133.8	< 0.001
6	21.6	105	36.7	25.5	62	< 0.001
7	22.8	97	51.4	27.3	85.5	< 0.001
8	22.5	111	11	10.7	50.8	< 0.001
9	22.2	102	84.8	45.9	104	< 0.001
10	22.6	103	69.7	38	83	< 0.001
11	23.3	100	61.4	34.6	102.9	< 0.001
12	22.9	103	60.3	39.3	110	< 0.001
13	21.9	104	77.3	48.6	132.9	< 0.001
14	21.8	102	55.8	30.8	75.7	< 0.001
15	23.1	108	42.9	26.2	26.2	< 0.001

Reference

Nelson, W., Tong, Y. L., Lee, J. K. & Halberg, F. 1979 Methods for cosinor rhythmometry. *Chronobiology* **6**, 305-323.