Operational highlights in the history of the Toolik Field Station

1975	Travel trailer	UAF
1983	13 ATCO units (dorms, etc)	UAF
1993	Wet, Dry, and Winter labs	NSF OPP- ASA
1996	GIS, meeting trailer	UAF
1998	Winter Quarters	NSF/UAF
1999	Labs 1-4	NSF OPP - PICO
2000	Cooperative Agreement-1	Barnes, James, Abels
2003	Cotton Grass	NSF OPP - VECO
2005	Cooperative Agreement-2	Barnes, Bret-Harte, Abels
2006	Generator move	NSF OPP - VPS
2010	Dining Hall	NSF OPP - CPS
2011	Cooperative Agreement-3	Bret-Harte, Barnes, Abels

- The Toolik Field Station (TFS) is operated and managed by the Institute of Arctic Biology of the University of Alaska Fairbanks (UAF) with cooperative agreement support from the Division of Arctic Sciences of the Office of Polar Programs at the National Science Foundation (NSF).

- TFS provides housing, meals, and laboratories in addition to support services for arctic research and education to scientists and students from universities, institutions, and agencies from throughout the US and the world. Research support includes GIS and mapping services, technical and IT assistance, shared commonly used equipment, and collection of standardized environmental data.

- A user-day fee contributes to costs of operations, and a Steering Committee and science user input advises TFS management on the direction and extent of science support and station operations.

- Through NSF's Arctic Research Support and Logistics contractor, CH2MHill Polar Services (CPS), TFS is also provided with research helicopter support and its infrastructure is developed and maintained. TFS infrastructure and equipment are owned by either UAF or NSF.

Steve Oberbauer, co-chair
Florida International University

Donie Bret-Harte, co-chair
University of Alaska Fairbanks

Michael Weintraub
University of Toledo

Gus Shaver
Marine Biological Laboratory

Michelle Mack
University of Florida

Breck Bowden
University of Vermont

Elissa Schuett
University of Vermont

Amanda Koltz
Duke University

Brian Barnes
University of Alaska Fairbanks

Michael Abels
University of Alaska Fairbanks

Mike McKibben (ex officio seat)
CH2MHill

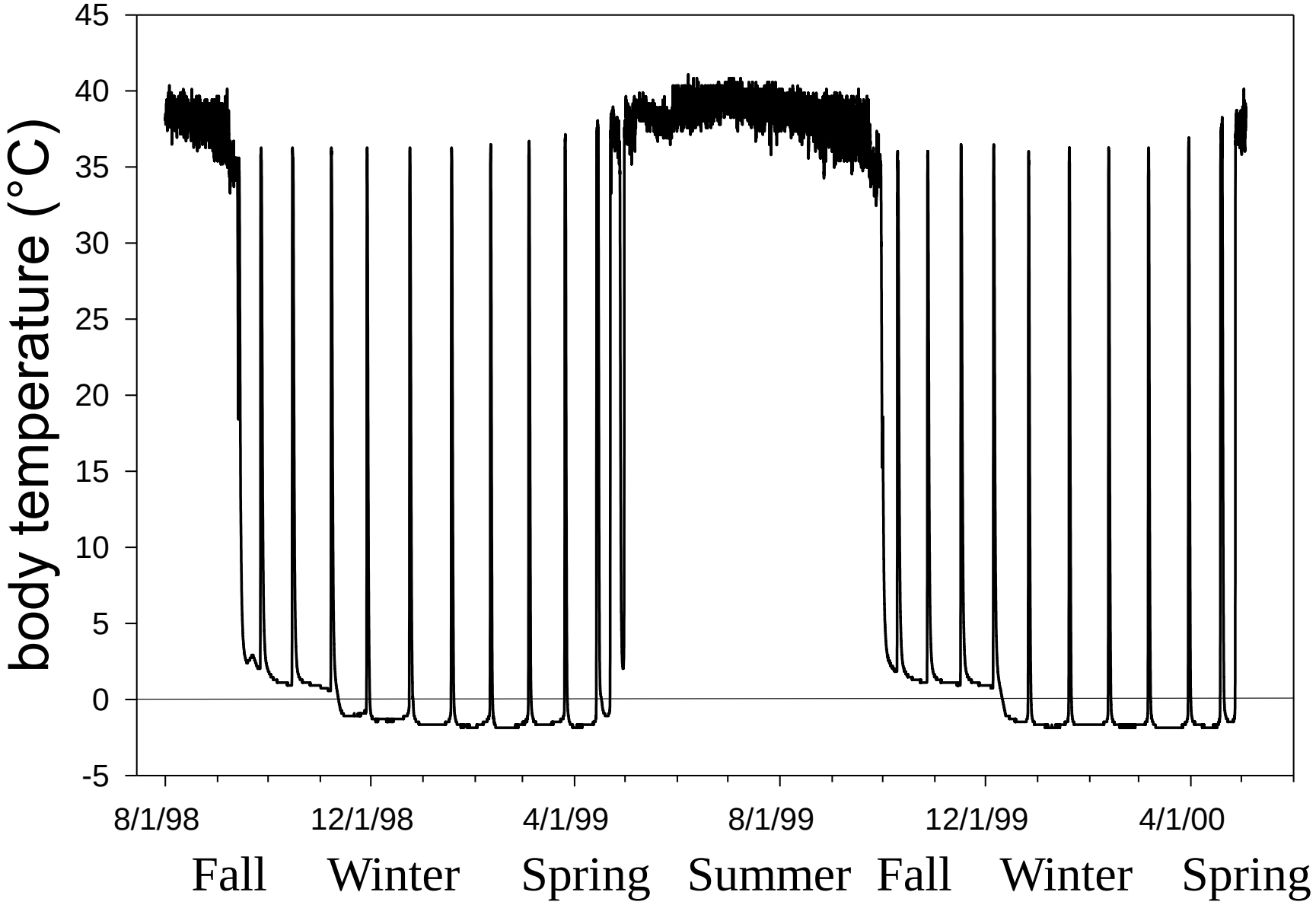
Renee Crain (ex officio seat)
NSF

Pat Haggerty (ex officio seat)
NSF

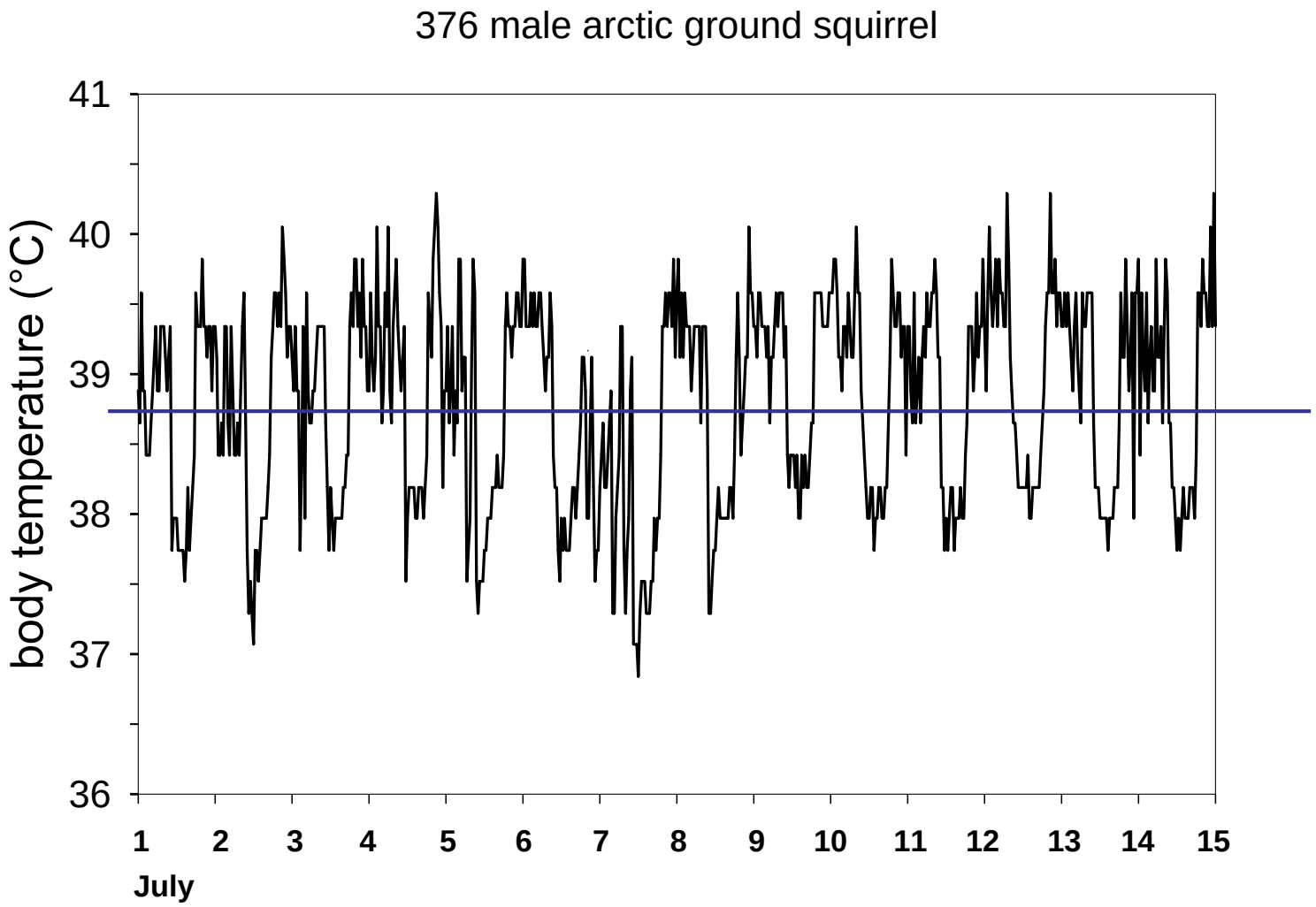
Sik-siks' sense of time.

Urocitellus parryii

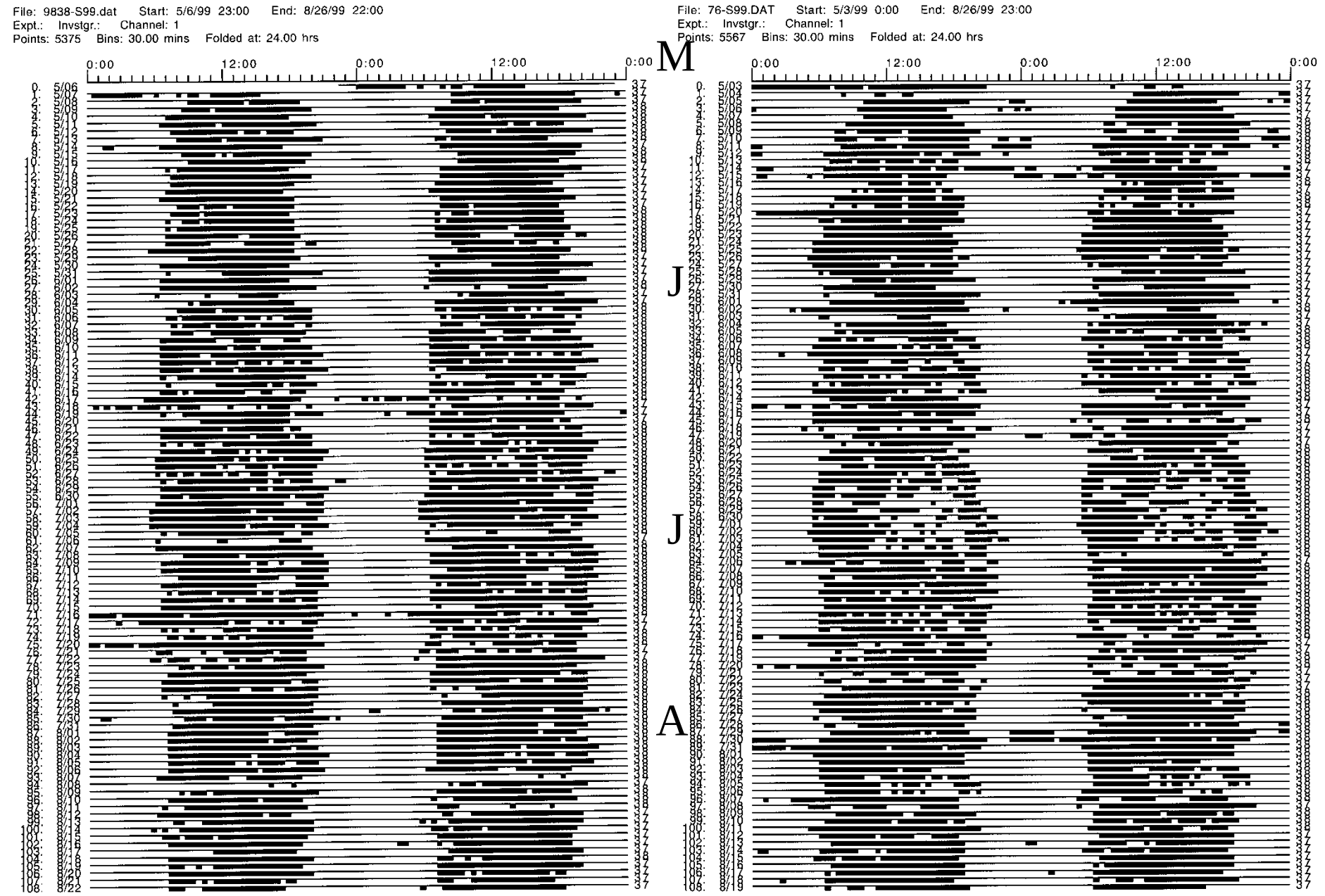
Two year record of body temperatures of a free-living arctic ground squirrel in northern Alaska

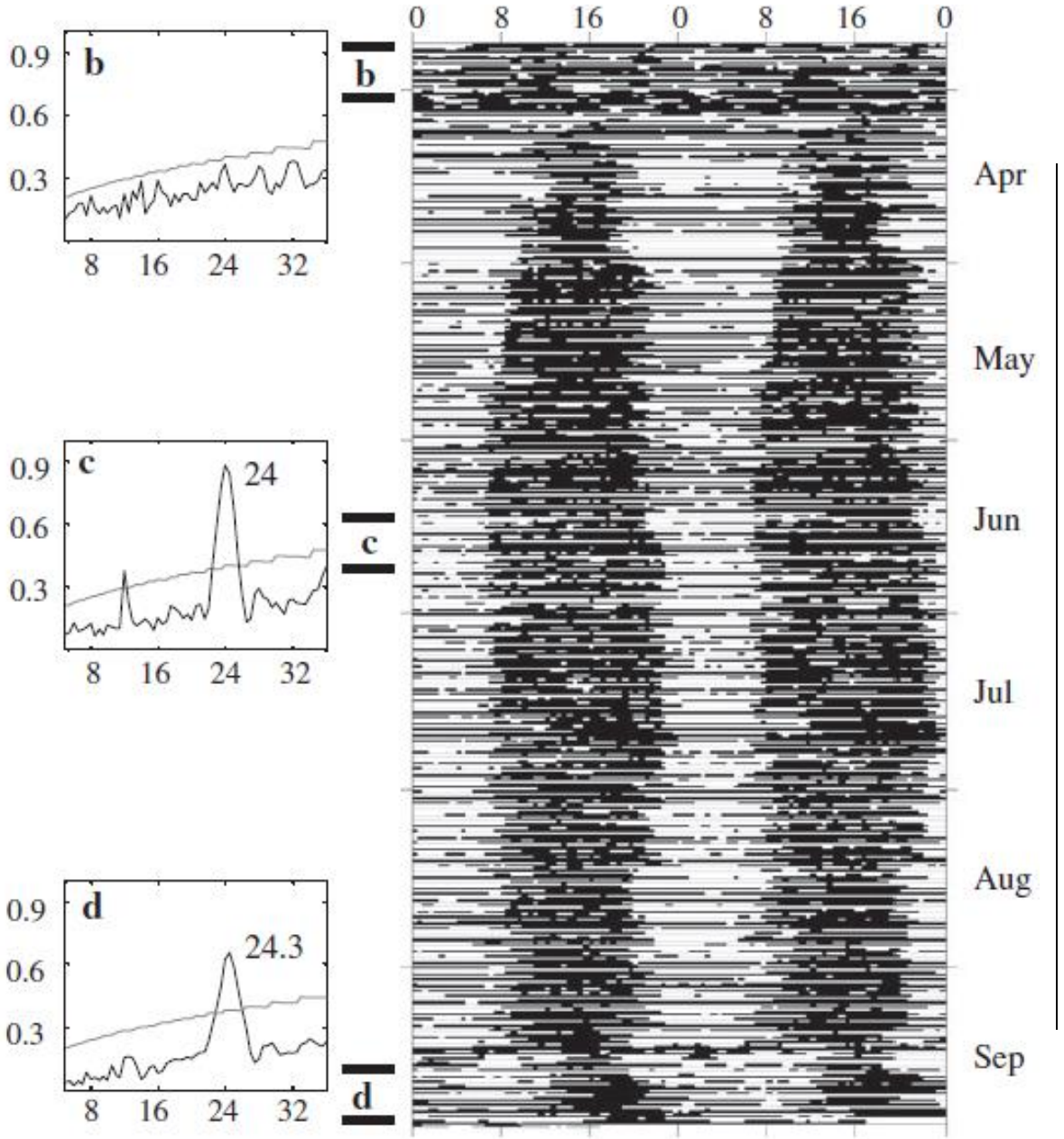


Diurnal rhythms of Tb persist during the active season.



arctic ground squirrels – timing of body temperature peaks May-Aug





euthermic pre-emergence interval, arhythmic

entrained active season

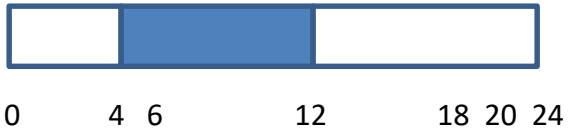
euthermic post-immergence interval, free-running

Williams, Barnes, and Buck (2012) *Biology Letters*

1 June

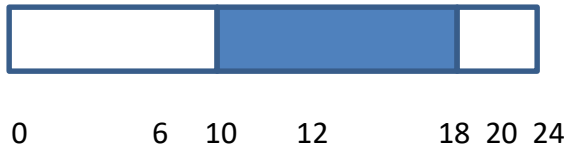
ags trapped 1 June and brought to TFS chambers on16L:8D: lights on 6am, off 10pm

4 June



after 3-4 day adjustment period (is this necessary?), phase delay lights on by 6 h; lights on 12 noon, off at 4am

9 June

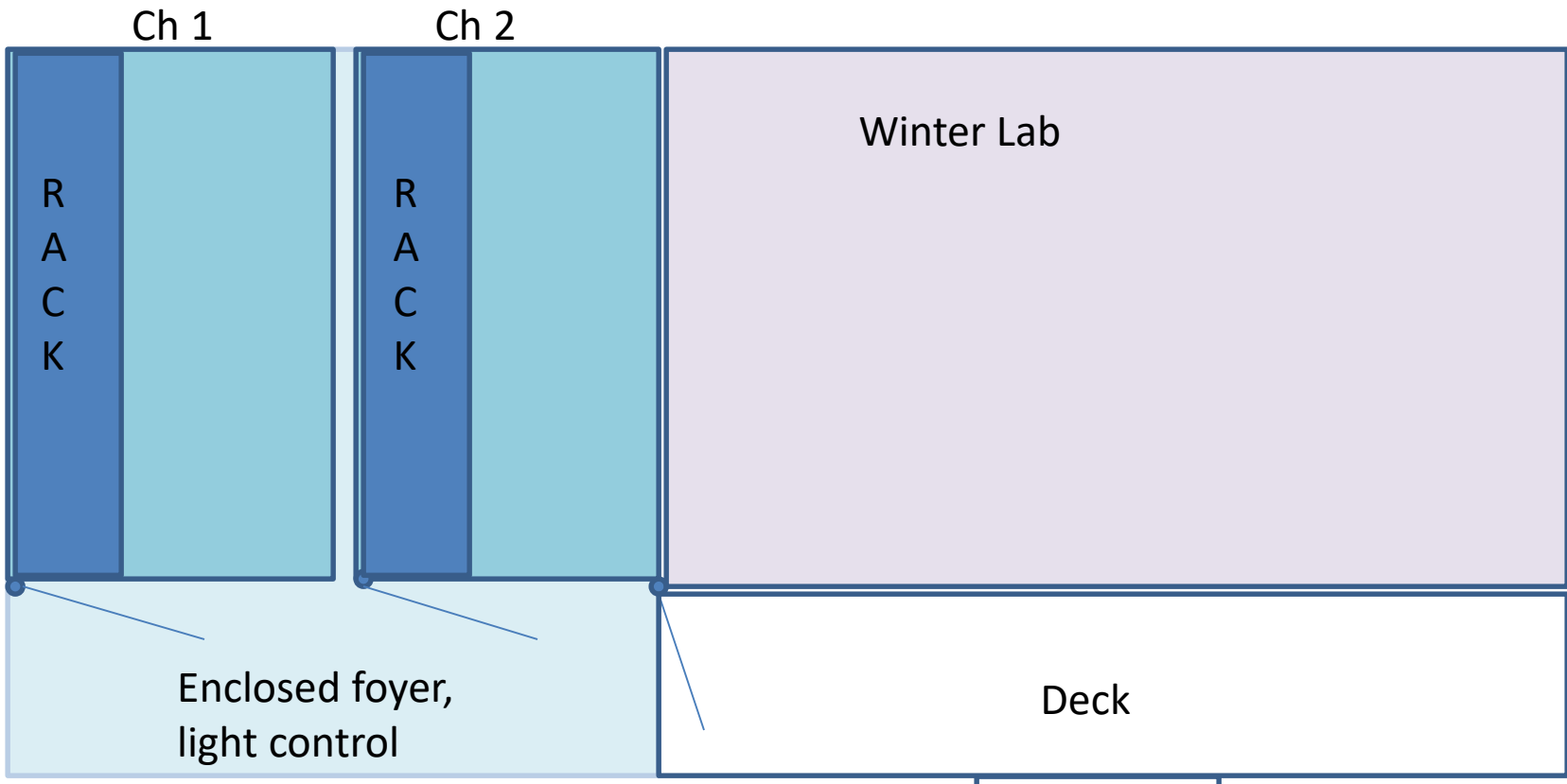


after 5 days, phase delay an additional 6 h; lights on at 6pm, off at 10am

14 June

after 5 days, release phase shifted animals at home burrow at 7pm

Draft protocol for ags phase shift experiment with schedule for changing light cycle. Control ags would remain in condition 1 (june 1) throughout the experiment.



0-25 C control, ± 1 C
LED lighting on ceiling and opposite wall
Ventilation control 0-10 room changes of air/hour
Single HVAC unit below deck, but plumb chambers for separate HVAC units in the future