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Writings: Bird song charts.

Leopold, Aldo, 1887-1948
[s.l.]: [s.n.], [s.d.]

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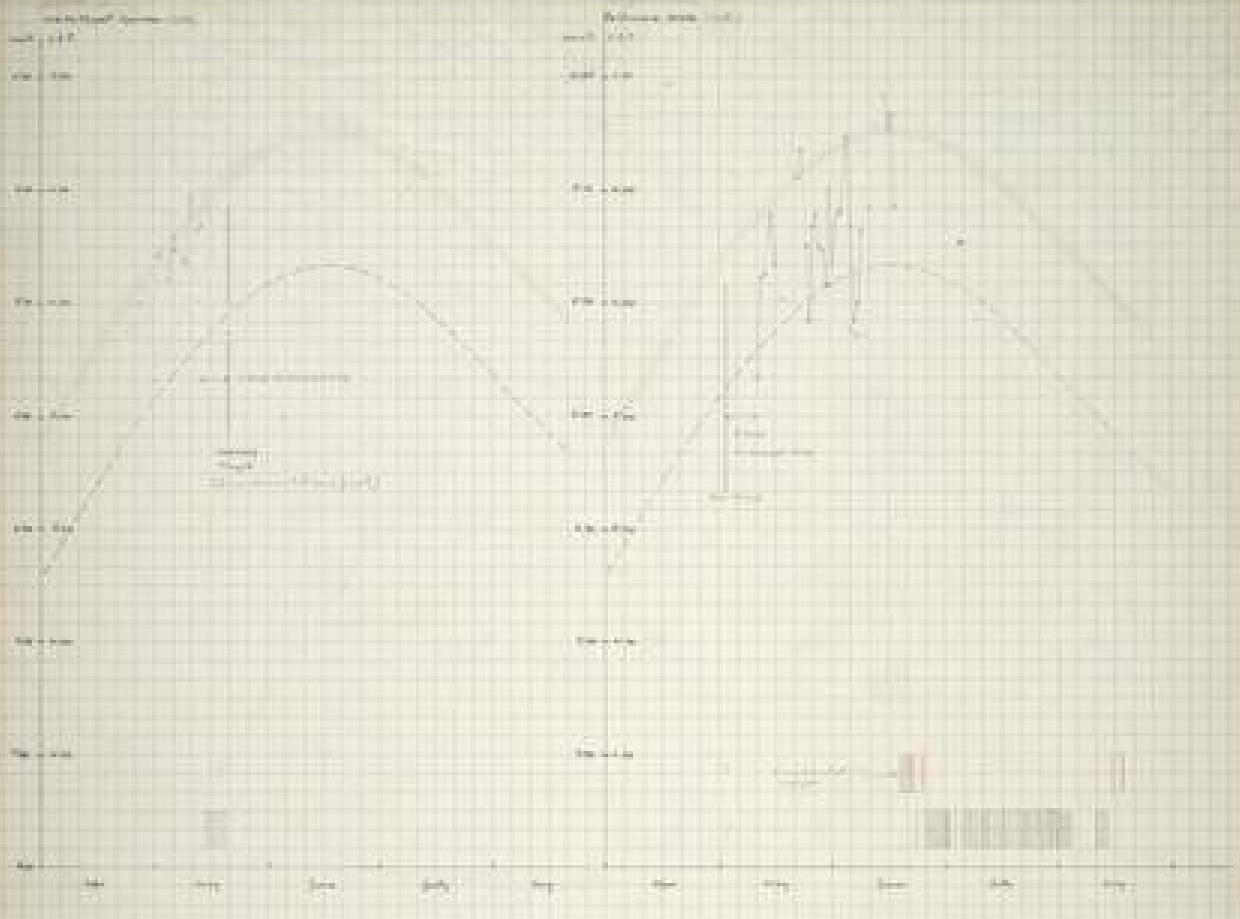
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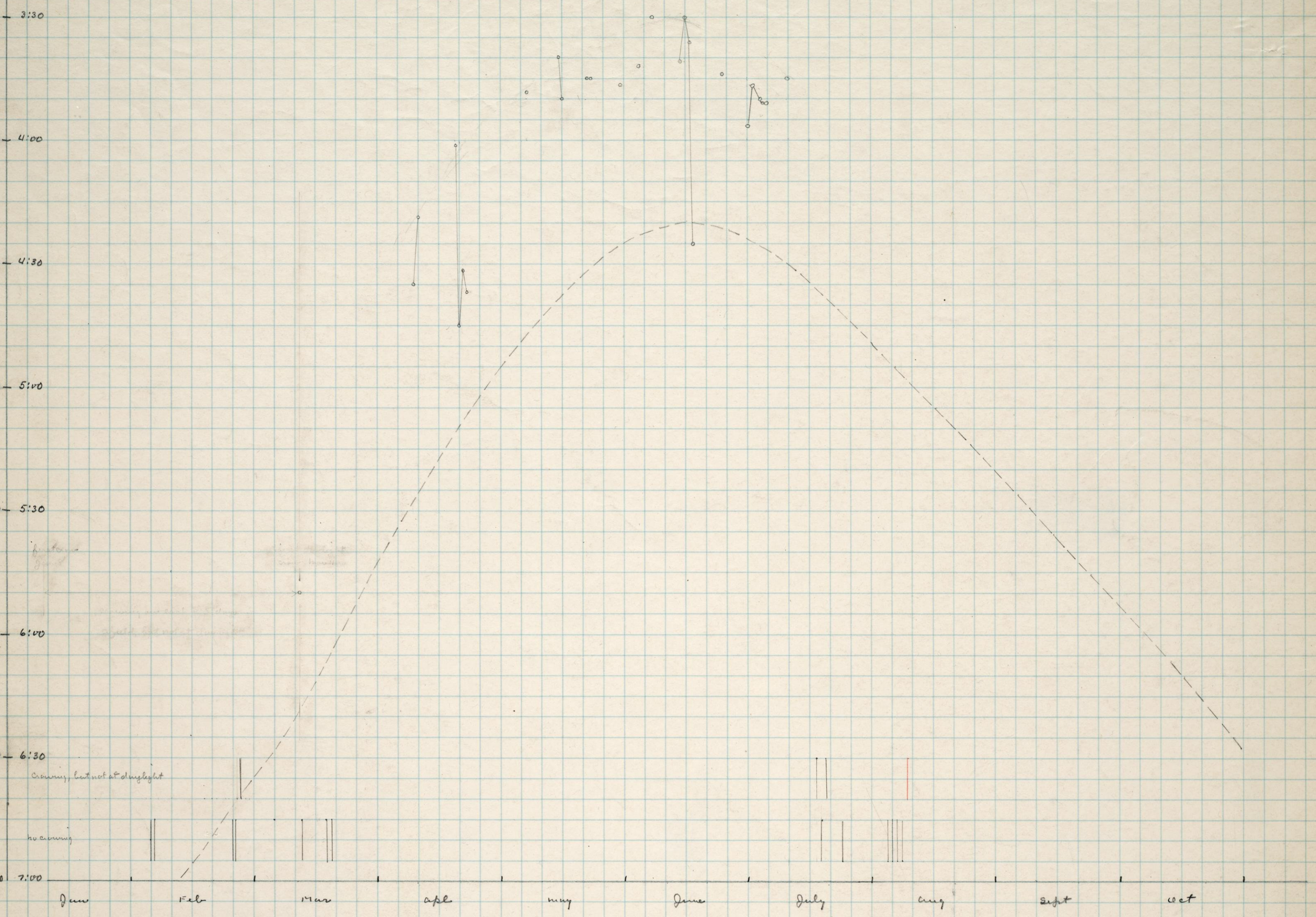


Order of Singing - May & June. Table 1
(Minutes after 4AM, May and June)

Species	Clear	Cloudy	Both
Indigo	45, 21, 28, 20, 10, 20,	68, 35, 57,	
	144 ÷ 6 = 24 (4:24) ✓	160 ÷ 3 =	304 ÷ 9 = 34 (4:34)
robin	45, 10, 5, 28, 40, 36, 20, 17, 21, 38, 5, 30, 20, 6, 20, 20, 13	40, 62, 48, 50, 50, 7, 40, 40, 40, 27, 32, 36, 22, 11, 14, 18, 25, 20, 20, 42, 25, 5, 4, 35	
	374 ÷ 17 = 22 (4:22) ✓	713 ÷ 24 = 30 (4:30)	1087 ÷ 41 = 26 (4:26)
pewee	52 27 20 14 20	85, 35	
	133 ÷ 5 = 27 (4:27) ✓	120 ÷ 2	253 ÷ 7 = 36 (4:36)
catbird	60 45 61 60 35 37 40 38 33 17 36 27 23 22 47 41 35 30 30	89 4 60 45 29 40 40 38 26 37 55 32 46 35 72 59 30 26 46 35	
	717 ÷ 19 = 38 (4:38) ✓	844 ÷ 20 = 42 (4:42)	1561 ÷ 39 = 40 (4:40)
field spar	60 33 17 21 10 -4 12	65 40 30	
	149 ÷ 7 = 21 (4:21) ✓	135 ÷ 3 =	284 ÷ 10 = 28 (4:28)
bluebird	60 31 30 23 40	71 50 36	
	184 ÷ 5 = 37 (4:37) ✓	157 ÷ 3 =	341 ÷ 8 = 43 (4:43)
Crested fly	70 45 26 31 25 12 30	90 45 30 72	
	239 ÷ 7 = 34 (4:34) ✓	237 ÷ 4 =	476 ÷ 11 = 43 (4:43)
ovng spar.	37 45 28 39 30	46 47 45	
	179 ÷ 5 = 36 (4:36) ✓	138 ÷ 3 =	317 ÷ 8 = 39 (4:39)
phoebe	40 50 45 17 42 41 30 44 57	48 45 30 36	
	366 ÷ 9 = 41 (4:41) ✓	159 ÷ 4 =	525 ÷ 11 = 48 (4:48)
dove	58 59 65 59 58 40 50 52 53 50 31 30 34 45 31 23 20 40 26 43 35 35 40, 39	66 65 67 76 64 68 65 63 47 40 42 52 42 53 29 46 35 66 44 30 42 61	
	1016 ÷ 24 = (4:42) ✓	1163 ÷ 22 = 53 (4:53)	2179 ÷ 46 = 47 (4:47)
cardinal	74 66 80 63 59 58 18 57 29 44 2 35 27 37 36 75	90 85 70 45 26 45 40 12 16 22 26 38 38 58 56 55 45 44	
	758 ÷ 16 = 47 (4:47) ✓	811 ÷ 18 = 45 (4:45)	1569 ÷ 34 = 46 (4:46)
wood thrush	70 50 64 70 50 31 23 10 35 35	85 30	
	438 ÷ 10 = 44 (4:44) ✓	115 ÷ 2 =	553 ÷ 12 = 46 (4:46)
Eng Spar	52 51 51 50 55 50 52 43 55 45 52	52 55 47 45 58 65 65 58 67 72 60 45 48 61	
	556 ÷ 11 = 51 (4:51) ✓	798 ÷ 14 = 57 (4:57)	1354 ÷ 25 = 54 (4:54)
thrasher	50 70 50 46 50 30	93 69 65 53 50 48 72	
	296 ÷ 6 = 48 (4:48) ✓	450 ÷ 7 = 64 (5:04)	746 ÷ 13 = 57 (4:57)
worm	80 68 64 63 68 55 62 62 52 50 44 53 43 51 31 30 34 43 41 48 46 55 44 56	85 84 80 71 78 72 67 52 55 49 47 50 48 50 60 51 50 60 39 58 52 47 46 67	
	1243 ÷ 24 = 52 (4:52) ✓	1418 ÷ 24 = 59 (4:59)	2661 ÷ 48 = 55 (4:55)
E meadowlrk	57 58 41 30 38 23 74	68 56 45	
	321 ÷ 7 = 46 (4:46) ✓	169 ÷ 3 =	490 ÷ 10 = 49 (4:49)
warbl vireo	80 65 46 44 39 36 70	65 43	
	380 ÷ 7 = 54 (4:54)	108 ÷ 2 =	488 ÷ 9 = 54 (4:54)
bluejay	68 71 68 59 50 30 53	85 86 72 57 55 50 49 44 46 65 51 53 60 66 46	
	399 ÷ 7 = 57 (4:57)	895 ÷ 15 = 60 (5:00)	1294 ÷ 22 = 59 (4:59)
redwing	65 58 20 72	80 70 74 61	
	215 ÷ 4 =	285 ÷ 4 =	500 ÷ 8 = 63 (5:03)
Baltimore	110 83 82 67 80 89 49 67 76 86 49 66 46 35 44	57 75 95 85 70 67 70 95 90 71 65 40	
	1029 ÷ 15 = 69 (5:09)	880 ÷ 12 = 73 (5:13)	1909 ÷ 27 = 71 (5:11)
yellowthr	60 70 70 65		
	265 ÷ 4 =		
Chipping Spar	73 68 63 49	69	
	253 ÷ 4 =	69 ÷ 1	322 ÷ 5 = 64 (5:04)
BB Cuckoo	62 74 75 57 100 120	105 53	646 ÷ 8 = 81 (5:21)
	488 ÷ 6 = 81 (5:21)	158 ÷ 2	
YT Vireo	150 105 100 135	110 110	
	490 ÷ 4	220 ÷ 2 = 110	710 ÷ 6 = 118 (5:58)

R. N. Pheasant (Blanchworthy)

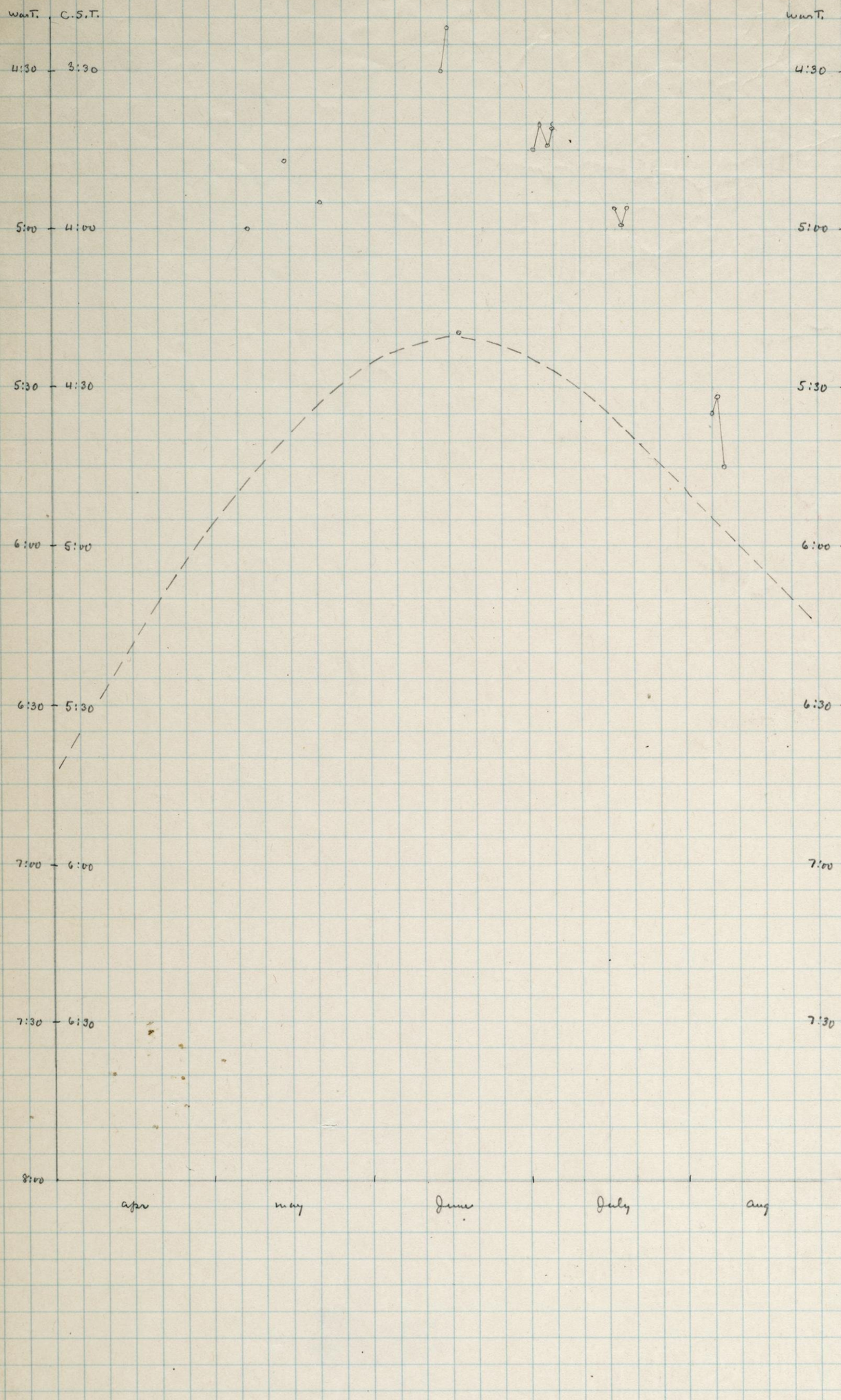
W.m.T.	C.S.T.
4:30	3:30
5:00	4:00
5:30	4:30
6:00	5:00
6:30	5:30
7:00	6:00
7:30	6:30
8:00	7:00



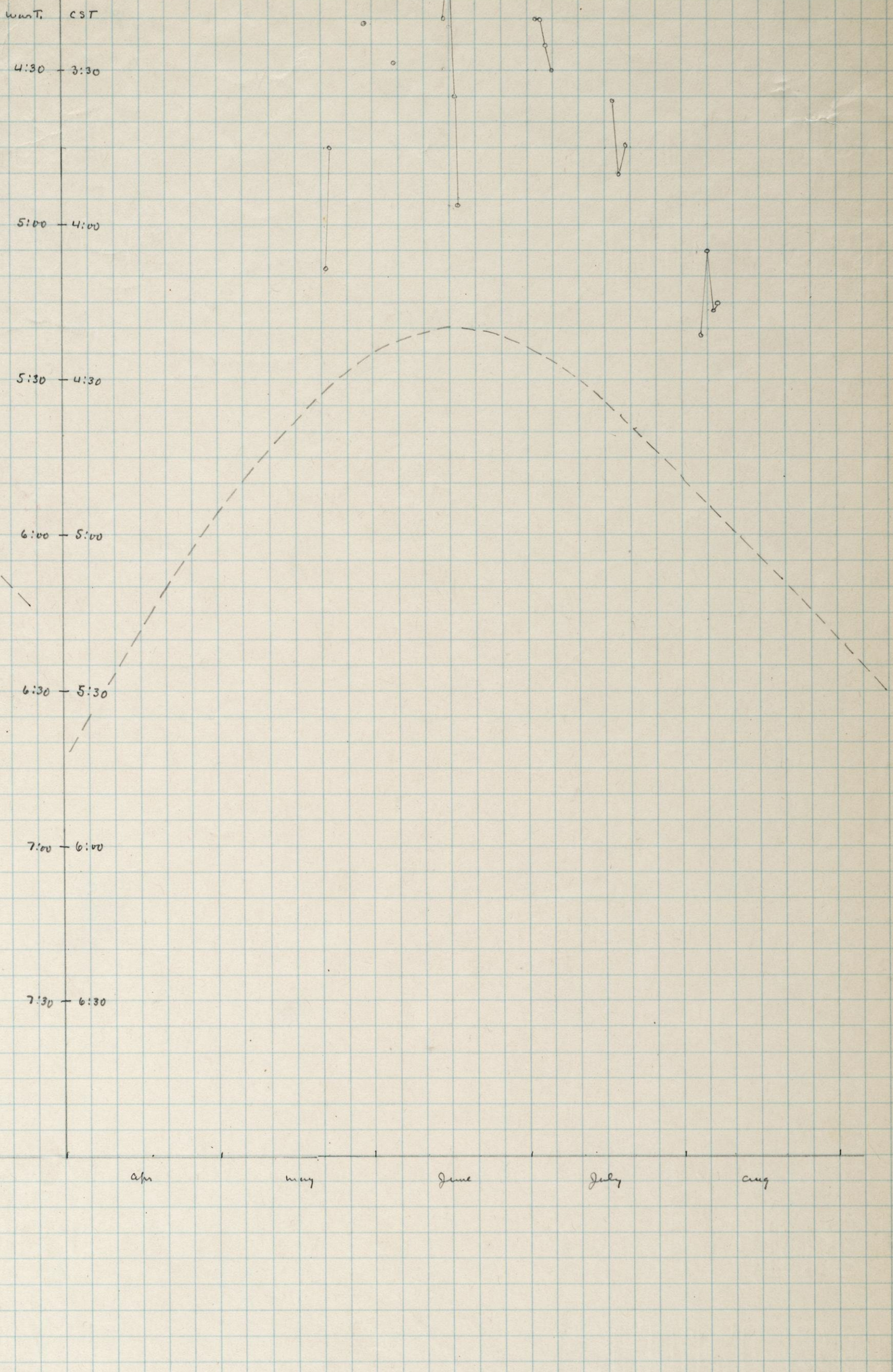
J. p127: phas. crowed daylight 12-5-43. Time?
J. p102: phas " " 9-27-43 (10-1, 10-2 also. phenology p 57)
J. p119: " " " 10-31-48. Time?
Phenology p 43: July crowing?
Aug. crowing?

7/23 Sw phears range all day - no crowing

Towhee



Indigo Bunting



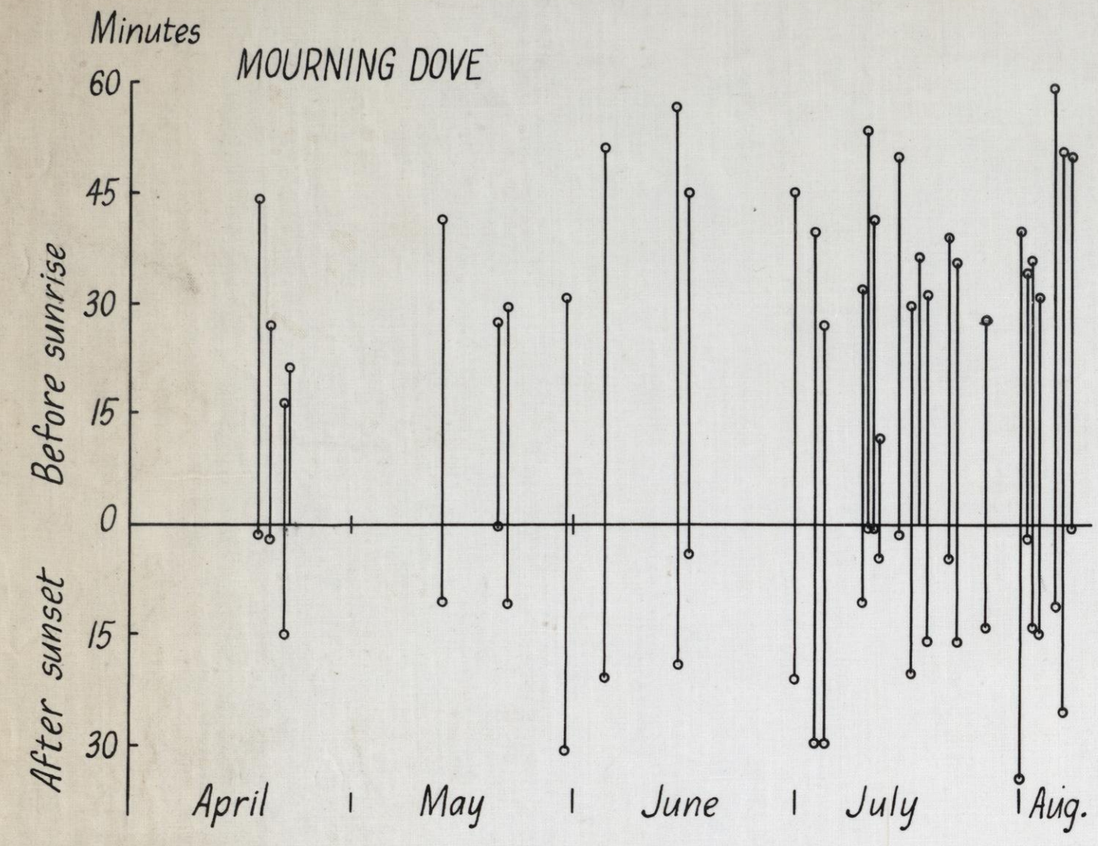
War time | C.S. time

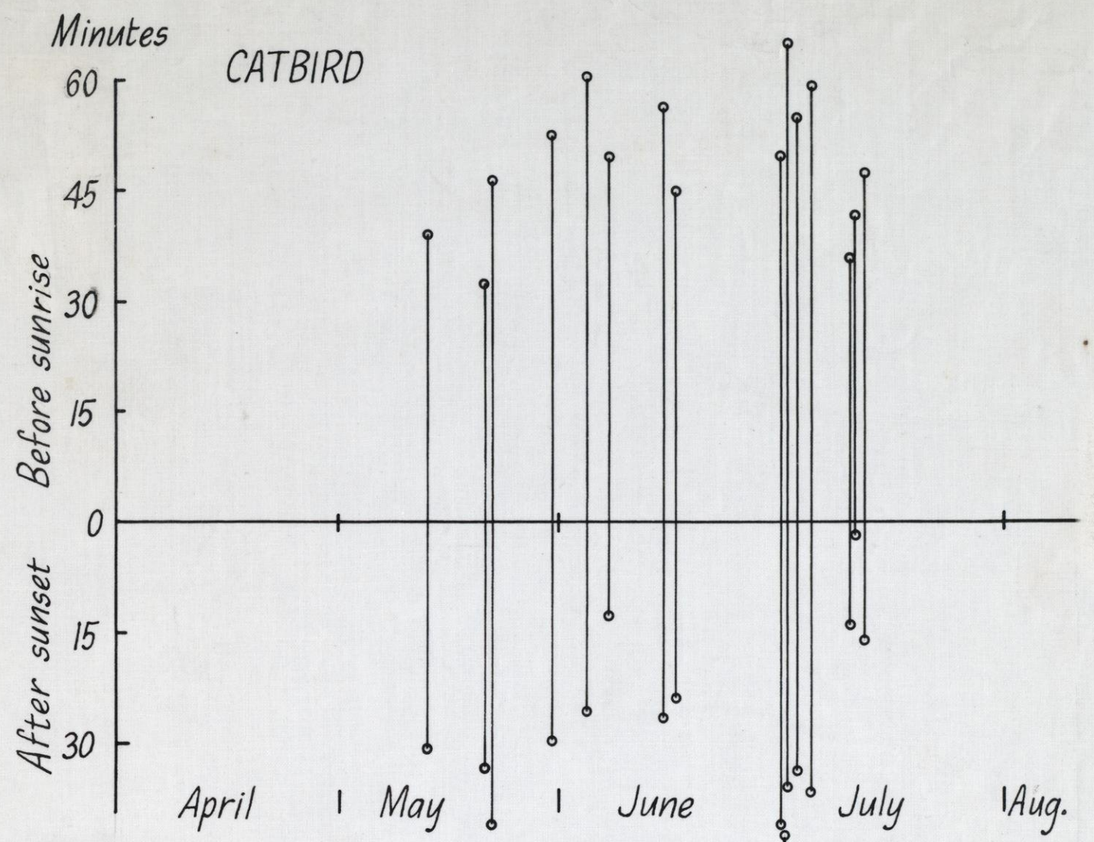
January | February | March | April | May | June | July | August | September | October

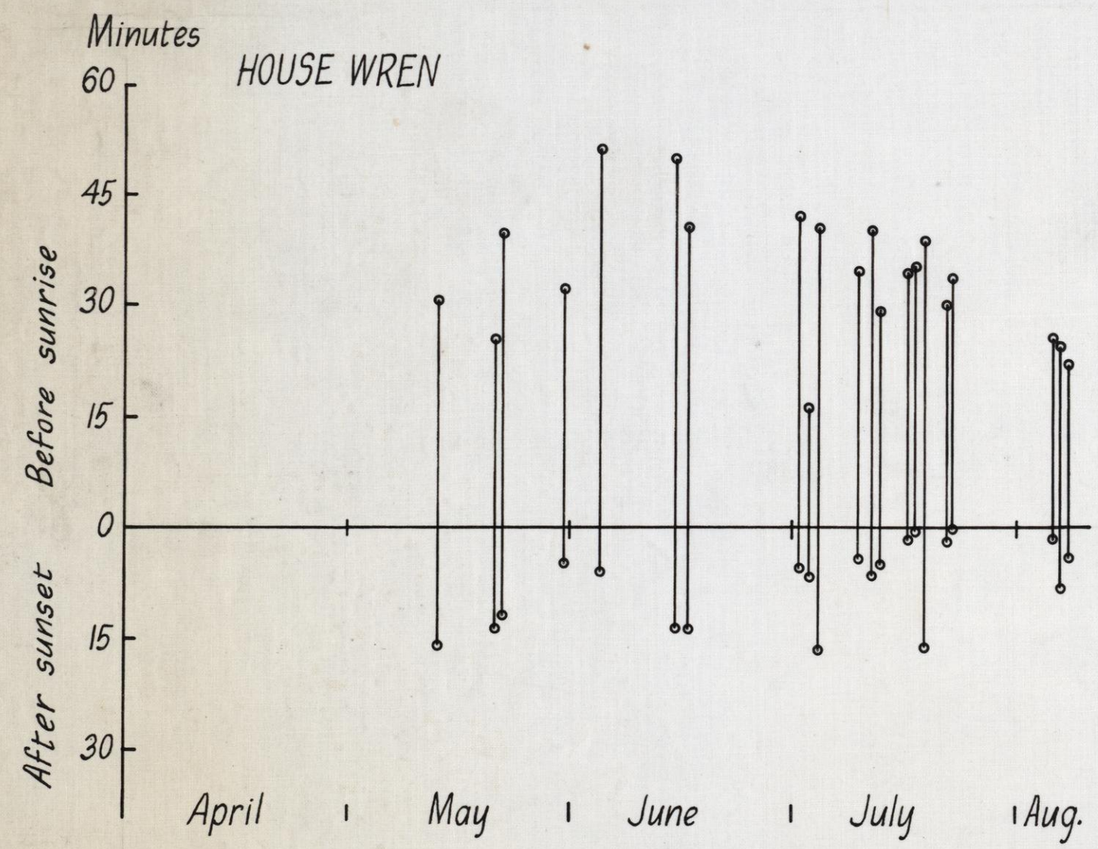
4:00 – 3:00
4:30 – 3:30
5:00 – 4:00
5:30 – 4:30
6:00 – 5:00
6:30 – 5:30
7:00 – 6:00
7:30 – 6:30
8:00 – 7:00

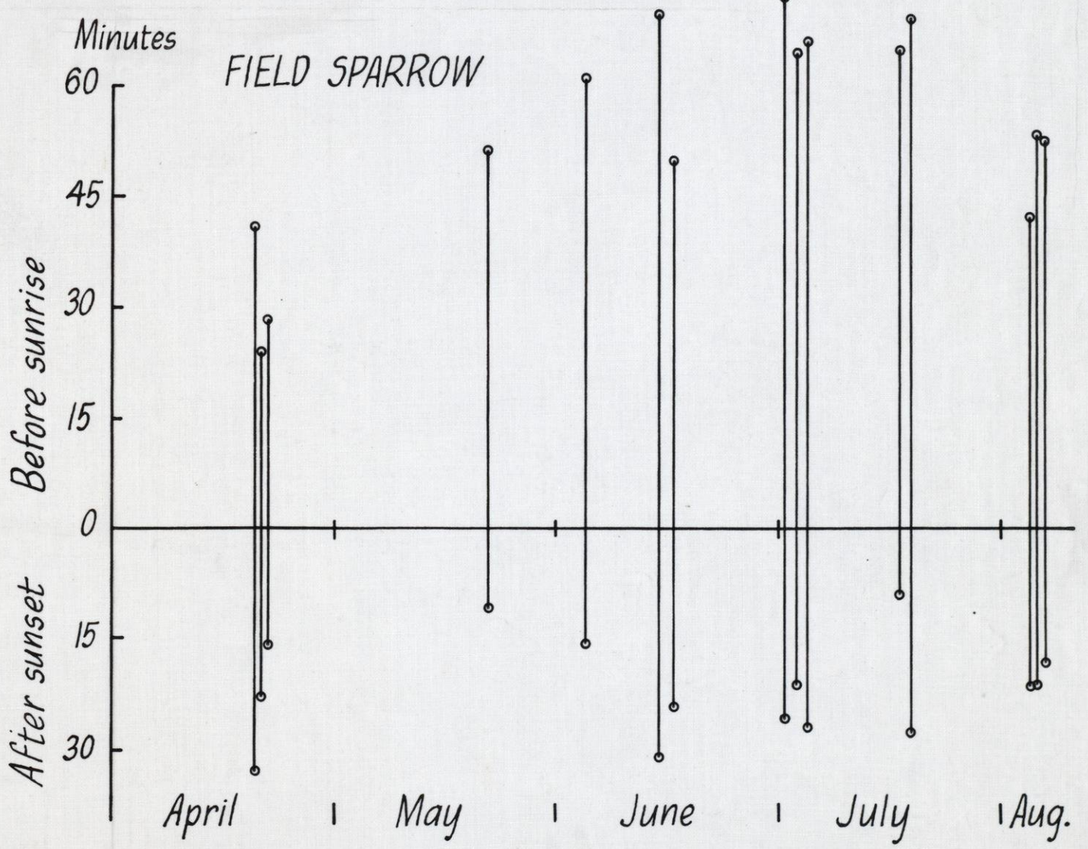
CARDINAL
daybreak song
daybreak call
daybreak moon

rain
fog
calm
moon
rain
cloudy
N.E. wind
SUNRISE
cloudy
cold
windy
snow
clear
cold
cloudy
No song
Song, but not at daybreak


Minutes
MOURNING DOVE
60
45
30
15
0
15
30
Before sunrise
After sunset
April
May
June
July
Aug.


Minutes
CATBIRD
60
45
30
15
0
15
30
Before sunrise
After sunset
April
May
June
July
Aug.


Minutes
HOUSE WREN
60
45
30
15
0
15
30
Before sunrise
After sunset
April
May
June
July
Aug.


Minutes
FIELD SPARROW
60
45
30
15
0
15
30
Before sunrise
After sunset
April
May
June
July
Aug.

JAN. FEB. MARCH APRIL MAY JUNE JULY AUG. SEPT. OCT. NOV.

Duration of song in 1944

LEGEND—

- Song period, details not known.
- Full song, daily at daybreak.
- Tune-up, fade-out
- Silent period between arrival & first song
- Average departure date, (mostly after Schorger (19))
- Sporadic autumn song.
- Daily autumn song

BOBOLINK
PROTHONOTARY WARBLER
WOODCOCK
BALTIMORE ORIOLE
BROWN THRASHER
BLACK-BILLED CUCKOO
ROSE-BREASTED GROSBEAK
CATBIRD
RUFFED GROUSE
SCARLET TANAGER
WHIP-POOR-WILL
YELLOW WARBLER
WOOD THRUSH
YELLOW-THROATED VIREO
SHORT-BILLED MARSH WREN
CRESTED FLYCATCHER
WOOD PEWEE
NIGHTHAWK
BOBWHITE
TOWHEE
WARBLING VIREO
INDIGO BUNTING
NORTHERN YELLOW-THROAT
CHIPPING SPARROW
HOUSE WREN
HENSLOW SPARROW
FIELD SPARROW
EASTERN MEADOWLARK
REDWING BLACKBIRD
BLUEBIRD
MOURNING DOVE
SONG SPARROW
ROBIN
CARDINAL
RING-NECKED PHEASANT

	Duration (Days)	Station	
BOBOLINK	48	AB	1
PROTHONOTARY WARBLER	51	A	2
WOODCOCK	52	A	3
BALTIMORE ORIOLE	53	AB	4
BROWN THRASHER	64	AB	5
BLACK-BILLED CUCKOO	68	A	6
ROSE BREASTED GROSBEAK	76	AB	7
CATBIRD	86	AB	8
RUFFED GROUSE	86	A	9
SCARLET TANAGER	90	AB	10
WHIP-POOR-WILL	91	A	11
YELLOW WARBLER	92	AB	12
WOOD THRUSH	92	AB	13
YELLOW THROATED VIREO	93	A	14
SHORT-BILLED MARSH WREN	97	AB	15
CRESTED FLYCATCHER	99	A	16
WOOD PEWEE	100	A	17
NIGHTHAWK	100	AB	18
BOBWHITE	101	A	19
TOWHEE	102	AB	20
WARBLING VIREO	102	A	21
INDIGO BUNTING	103	A	22
NORTHERN YELLOWTHROAT	103	AB	23
CHIPPING SPARROW	105	AB	24
HOUSE WREN	106	AB	25
HENSLOW SPARROW	112	AB	26
FIELD SPARROW	137	A	27
EASTERN MEADOWLARK	139	AB	28
REDWING BLACKBIRD	149	AB	29
BLUEBIRD	159	A	30
MOURNING DOVE	161	AB	31
SONG SPARROW	163	AB	32
ROBIN	165	B	33
CARDINAL	225	AB	34
RING-NECKED PHEASANT	245	AB	35

Length of day (Hours) 10.0 11.2 12.6 14.0 15.0 15.2 14.5 13.2 11.7 10.4 9.3

← Aspen catkins
x Woodchuck out ← pasque ← Marsh marigold ← yarrow ← butter & eggs ← boneset → yellow foxglove ---→ hickory bare +-→ Tamarack bare
x spring peeper ← alder ← w. Trillium ← harebell ← Joe pye ← wh. snakeroot ← R. Oak acorns fall → basswood bare
x chipmunk out ← wh. elm ← columbine ← bl. locust ← cardinal fl. ← bottle gentian x fall cankerworm ascends

Fig 1

Sunrise & Sunset Song - in minutes before & after. Red = data from McCabe & students See Fig 7.

Sunrise = left. Sunset = right. underline = shade . No underline = sundown

Species:		Cardinal	Pheasant	Robin	Dove	Song Sparrow	Bluebird	Meadow Lark	Thomsen Redwing	Field Sparrow	Woodcock	Jay	B. Thrasher	Balt. Oriole	Wht Throat (crosbeak)	Chipping Sparrow	Warbl. Vireo	Wren	Catbird	Wd. Thrush	Least F. Flycatcher (Indigo)	Towhee	Whippoor Will (Eng Sparrow)	N. yellow Throat	Robolink (S. B. Marsh Wren)	Cr Flycatcher	Wd Peewee	R.E Vireo (Y T Vireo)	Kdby Bird	Blk Bill Cuckoo (Gold Finch)	Bob White
DATE 1944	WARTIME SR SS	Before SR	After SS	etc																										
3/16	7 9 7 5				45																									
3/17	7 8 7 6				11																									
4/8	630 730								18		22 28																			
4/9	629 731										34 29																			
4/10	627 732										-25																			
4/18	614 741		36	55 27	44 1	26		20		34																				
4/19	612 742		93		2	25		3	8	23	16 35																			
4/20	610 744		71		27	43		41 6	1	41 12	22 18																			
4/21	609 745		37 18	29 15	17 15	47 17		21 20	9 10	24	0 19																			
4/22	6 7 746		30 -1		22 -11			22 -6	12 -1	16	7 24																			
4/27	6 - 752							27	4	27																				
5/6	548 8 2		1 -2			26			34 11	23								28 -5												
5/7	547 83										31																			
5/13	540 89		?	?	42 11													32 16	39 31			16								
5/14	539 810										39																			
5/17	536 813																													
5/20	538 816				28 -1	19			9	19				4				26 14	33 34	24	(9)	14		24		3 24				
5/21	532 818	1 -3	47 20		29 18					52 12	7 35		2					40 12	47 42	27	(24 19)	37 17		12		47 29			-13	3
5/27	527 823								24																					
5/29	526 825		20	15	31			10	25	30				-20	(5)		15	33 -5	53 30	30	20	10				35	25			10
6/4	523 829	26	41 6		52 21	55 6		53 19	26	62 16		?	6 33	26 0 97	1	6		39 -4	52 6	56 26	55 16	21		13 26		52 36	56 26		62 21	26 -9
6/7	521 832		3	61	30	18			23	13									49 13				23	38	4	6			18	
6/10	521 834		51	?	31	21		16	10	19														26					21	
6/11	520 834		21	57	26	26		16	21	1		?	-4	-9					27		16			26		21			26	
6/12	520 835				25	25			25 3															25				?		
6/14	520 836		57	29	19	24 29	-16?	19 9	14 29	31				14	(14)		19	50 14	57 36	57	32 14	19		-11		29	40	-6	-17	19	14
6/16	520 836	22 20	44 -1		45 4	41 -1	50	42 -1	60 9	70 24				45 -1	? (-1)		41 -6	14 57	45 34	50 32	60 -1	50 9		24	10	37 60	45 39	-6	35	-20 19	30
7/1	524 839	6	27 11		45 21	35 26		35 6	? 11	50 26				40	(10?) 21		37 -14	41 6	50 42	42 16	(26)	? 6		11		50 45	45		27	-31	
7/2	525 839	35 -39	38 1	-84		55 26		11 16	13 26	73 26			-24		11 -24		-22 -13	43 6	65 36	50 1?	(65) (21)	40 -4		6		55 -47	65 36	(-50) (-69)	38	-19?	11
7/3	525 838	64 22	35 -18		40 30	45 17		7	7	65 27			7		? -8			17 7	55 34	47 2	(65) (22)	45 2		46 ? 55	20 12	55 32	65 42	(9) (-8)	65	34	
7/4	526 838			64 12	27 30	41 7		20 -8	-5 7	67 27	34 42		7		22 -18		25 -13	41 17	59 37	? 12	(61) (22)	47 7		48 36	49 27	26 27	60 38	(20) (-28)	67	32	-17 2
7/5	526 838										44																			
7/9	530 836			? 24	32 11						14							35 4	36 14											
7/10	530 835			33 32	54 2														42 2					(33) (-10)					
7/11	531 835			59 27	42 2						42 0							41 7	48 17					(26) (10)					
7/12	532 835				12 5						10							30 5	35 0					(20) (-5)					
7/14	533 834				50 1																									
7/16	535 833 ?	-33			30 22	12		-13		29	30 7				12		-33	35 2	22 -5	53	32 (22)	12		-3		19	22		-8		
7/17	535 832				37 -22		-32			8	31 8							36 -2			22 (59) (3)	39 -12		52 19		7 59	30		62 -17		-6
7/18	536 831 17	9	-1		32 16	49		16		65 28	36 -11							39 16		47	31 46 23	37 16		51 21		6 56	34				
7/21	539 829				39 5					69								31 2						(30) (7)						
7/22	540 828				36 17						-2							34 -2												
7/23	541 827				-19 -27						-32																			
7/24	542 826				47 -6													30 -16												
7/26	544 824			28 -9	28 -14						-6																				
7/27	545 823					7																								
7/31	548 819			58 6	34 34 40						-4																				
8/1	549 818			29 -17	34 2						31 2							-1 -3												
8/2	550 816				36 14						-1 -6							-1												
8/3	551 815			29 -45	32 15	17				26	29							9 -25			(-9) -5			11		-48	11				
8/4	552 814	11			36 -44					43 21 31 38								20 -11			-9					-44	16		21 4	(12)
8/5	554 813 24	-13			59 12	57	-13			57 22 32 44								26 2		31	(-39)		(32) (8)			-55	27		? -9	53 (-36)
8/6	555 812 43	14			44 26			-2		58 18 34 40	-16 1							8		49	(10) 19	19	77 (-13)	65 -43	19	39	28		-12	? -13
8/7	556 811 46	36			51 -1						25							4		(43)	-23	10	35 -7	-17		48			28	
8/9	558 809	-49			50													23												
8/13	602 802										17 13																			
8/15	604 800										37 -10																			
8/18	607 756			S -16	36 -11						5 -11																			
8/19	608 754				18 -2						28 3																			
8/20	609 753																						(13) (6)							
9/4	625 728																						(-1) (2)							
9/5	626 727									S 15																				
9/6	627 725																													
9/7	628 723																											52		
9/8	722																											28		
9/14																														

36

3:30 2:30

January | February | March | April | May | June | July | August | September | October | November | December

War Time | C.S. Time

4:00 | 3:00

4:30 | 3:30

5:00 | 4:00

5:30 | 4:30

Civil Twilight

Sunrise

6:00 | 5:00

6:30 | 5:30

7:00 | 6:00

7:30 | 6:30

8:00 | 7:00

8:30 | 7:30

1945 1947 1947 1947 1946→ 1947 1945 1945 1944 1945 1945 1944 1947 1947 1947

English Sparrow

daybreak song

daybreak call

time only - no light reading

0.5
0.4
0.3
0.2
0.1
0.05
0.04
0.03
0.02
0.012

Foot Candles

3:30 2:30

War Time	E.S. Time	January	February	March	April	May	June	July	August	September	October	November	December
4:00	3:00												
4:30	3:30												
5:00	4:00												
5:30	4:30												
6:00	5:00												
6:30	5:30												
7:00	6:00												
7:30	6:30												
8:00	7:00												
8:30	7:30												

Civil Twilight

Sunrise

CARDINAL

daybreak song

daybreak call

time only - no light reading

1945 1947 1947 1947 1947 1945 1944 1947 1945 1944 1945 1944 1944 1944 1945 1944 1946 1944 1947

0.5 0.4 0.3 0.2 0.1 0.05 0.04 0.03 0.02 0.012

Foot Candles

400 300

War C.S.
Time Time

430 330

500 400

CARDINAL

daily daybreak song

not daily daybreak song

daybreak call

530 430

600 500

630 530

civil twilight

700 600

730 630

sunrise

800 700

Top of curve

1. Do not connect non-consec. points at all
2. Use non-consec. colors use data from any year.
3. Plot light for card. as a graph. Thin dec. modes design.
4. Compute light averages by 15-day periods also steps.

rain

1945

February | March | April | May | June | July | August | September | October | November | December

right hand boundary actually used in average

1947

1945

50

0.012

x 0.012

(2)

	Species	1947 Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	1945 Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	1946 Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	1947 Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
✓	Cardinal																																																
	Pheasant																																																
✓	Robin																																																
✓	Dove																																															
	Song sparrow																																															
	Bluebird																																															
	Meadowlark																																															
	Redwing																																															
	Field sparrow																																															
	Woodcock																																															
	Blue jay																																															
	B. Thrasher																																															
	B. oriole																																															
	Whitethroat																																															
✗	chipping sp.																																															
✗	Warb. vireo																																														
	Wren																																															
	Catbird																																															
✗	Woodthrush																																															
✗	Towhee																																															
✗	Whippoorwill																																														
✗	Yellowthroat																																															
✗	Cr. flycatcher																																															
✗	Pewee																																															
✗	Bobwhite																																															
	Indigo																																															
✗	Y.T. Vireo																																															
✓	E. Sparrow																																														
✗	Kingbird																																															
✗	Goldfinch																																															
	Crow																																															

War C.S.
Time Time

4:30 3:30

5:00 4:00

Hour CTS 5:30 4:30

6:00 5:00

6:30 5:30

7:00 6:00

7:30 6:30

8:00 7:00

Cardinal

January February March April May June July August September October November December

— Time only
— Time + light
--- Discontinuous

Sheet #1

Legends: Madison – no underline began – lower left
Shacks – underline ended – upper right

X – no observation made; none seen
S – sang, but not at daylight
N – seen at roost, probably night song
O – silent, no song.

Start of Song – 1944
C – call, not song
All begun Mar Tams.

Species								40 Cardinal	03 Phoebe	26 Robin	05 Dove	song 48 Sparrow	28 Bluebird	36 Meadowl.	37 Redwing	Field Sparrow 47	04 Woodcock	19 Jay	18 Martin	25 B. Thrush	38 Balt. Oriole	OMIT Hermit Thrush	Chipping Sparrow 46	30 Warbling Vireo	22 Worm	24 Cathird	27 Brown Thrash	Least Flycatch	44 Towhee	09 Whip poorwill	33 Yellow Throat	35 Bobolink	15 Crested Flycatcher	17 House Wren	02 Bobolink
										3/2 ?	3/25 ?	? ?	3/6 3/10	? ?	? ?	4/7	4/1 4/7		4/6 ?	4/20 ?	5/2 ?	4/29 ?	? ?	5/5 ?	5/1 5/5	5/2 ?	5/5 5/7		Oct 18 ? (Farmer)	5/6	5/6 5/7	5/7	5/1 5/11	5/17	5/20
A.M. C.T.	A.M. S.R.	P.M. S.S.	P.M. C.T.	A.M. REL. HUM.	P.M. REL. HUM.	DAY OF THE YEAR	Date	Min Temp	Weather																										
6:56	7:28			090		008	1/8	-2 X	clear	0 X		091 S																								
6:55	7:27			087		013	1/13	3	clear	0 X	S091																									
6:51	7:22			069		022	1/22	30	cloudy	2X	S091	S091																								
6:46	7:17			097		027	1/27	39	cloudy	2X	S91																									
						028	2/4-5-7-10-18-20-21				S	O Feb.																									
6:09	6:38			100		057	2/26	32	cloudy foggy	2X	6:15 7:15	091 S																									
6:08	6:37			077		058	2/27	28	cloudy clear	2X	6:45 7:45	091 S																									
6:06	6:35			088		059	2/28	24	cloudy clear	2X	6:15 7:15																									
OMIT				077		—	2/29	20	cloudy	2X	6:30 7:30																									
6:05	6:34			085		060	3/1	20	part cloud	1X	6:15 7:15																									
6:03	6:32			091		061	3/2	28	cloudy	2X	6:25 7:25						3 singing																			
6:02	6:30			096		062	3/3	32	cloudy	2X	6:25 7:25																									
6:01	6:29			088		063	3/4	25	cloudy	2X	6:55 7:55																									
5:59	6:27			094		064	3/5	24	part cloud	1X	6:15 7:15																									
5:54	6:22			079		067	3/8	7	part cloud	1X	6:45 7:45	090																									
5:50	6:18			079		069	3/10	15	cloudy	2X	6:55 6:55						091 S																			
5:49	6:17			074		070	3/11	40°	cloudy	2X	6:15 7:15	5:50 6:50																									
5:47	6:15			078		071	3/12	28°	part cloud	1X	5:55 6:55	090 0																									
5:45	6:13			083		072	3/13	16	cloudy	2X	6:00 7:00				6:00 7:00																					
5:42	6:10			078		074	3/15	29	cloudy	2X	6:05 7:05																									
5:40	6:08			096		075	3/16	28	cloudy	2X	6:05 7:05				650 750																					
5:38	6:06			089		076	3/17	27	cloudy	2X	6:00 7:00				S 555 665																					
5:36	6:04			079		077	3/18	15°	part clear, calm	1 0	5:30 6:30	090 0					090 0	090 0																			
5:35	6:03			082		078	3/19	15°	cloudy, wind	2 3	5:45 6:45	090 0			.090 X		090 0	090 0																			
5:33	6:01			083		079	3/20	15	part cloud	1 X	5:37 6:37																									
5:31	5:59			088		080	3/21	25	part cloud	1 X	5:40 6:40																									
5:29	5:57			074		081	3/22	30	cloudy	2 X	5:50 6:50																									
5:28	5:56			099		082	3/23	33	part cloud	1 X	5:45 6:45																									
5:23	5:52			066		084	3/25	27°	part cloud	1 X	5:40 6:40				5:35 6:35																					
5:21	5:50			083		085	3/26	25°	cloudy, NW wind	2 3	5:28 6:28		3/26 Cunning all day Pogonia		5:10 6:10		090 0																				
5:20	5:49			097		086	3/27	26°	2" snow	5 calm 0	6:05 7:05				090 clump		090 0																			
5:18	5:47			088		087	3/28	26°	1" snow, calm	5 0	5:45 6:15				5:45 6:15		090 0																			
5:16	5:45			097		088	3/29	20°	4" snow, calm	5 0	5:25 6:25				5:20 6:20		090 0																			
5:14	5:43			088		089	3/30	18°	4" new snow	5 NW wind 3	6:15 7:15				090 clump		090 0																			
5:12	5:41			083		090	3/31	22°	4" snow	0 calm 0	5:25 6:25				5:10 6:10		090 0																			
5:11	5:40			096		091	4/1	25°	clear, calm	0 clear 0	5:25 6:25				5:10 6:10		6:05 7:05																			
5:09	5:38			070		092	4/2	22°	clear, NW br	0 1	5:11 6:11				5:00 6:00		6:12 7:12																			
5:07	5:36			079		093	4/3	23°	clear, calm	0 0	5:15 6:15				5:00 6:00		6:03 7:03																			
5:05	5:34			080		094	4/4	21°	clear, N br	2 1	6:00 7:00				5:05 6:05		6:10 7:10																			
5:04	5:33			077		095	4/5	21°	clear, calm	0 0	5:20 6:20				4:58 5:58		5:55 6:55																			
5:02	5:31			078		096	4/6	33°	clear, calm	0 0	5:05 6:05				4:45 5:45		5:00 6:00																			
5:00	5:29	6:30	6:59	085	062	097	4/7	36°	cloudy, calm	2 0	4:57 5:57				4:32 5:32		5:40 6:40																			
4:59	5:28	6:31	7:00	100	056	098	4/8	35°	foggy, calm	3 0	5:02 6:02				4:30 5:30		090 0			091 S																
4:57	5:26	6:32	7:01	093	087	099	4/9	38°	foggy, calm	3 0	090 0	4:35 5:35			5:10 6:10		5:02 6:02	4:35 5:35	5:05 6:05	4:58 5:58	4:49 5:49	5:00 6:00													
4:55	5:24			074	050	100	4/10	30°	clear, moon 4	0 clear	4:46 5:46	4:18 5:18			4:45 5:45		4:53 5:53	4:35 5:35	?	4:52 5:52	5:07 6:07	0	090												
4:54	5:23			060		101	4/11	33°	cloudy, N wind	2 2	090 0				5:00 6:00		090 0																			
4:52	5:21			076		102	4/12	31°	clear, calm	0 0	4:59 5:59				4:39 5:39		5:09 6:09																			
4:50	5:19			066		103	4/13	41°	clear, calm	0 0	? ?				4:14 5:14		? ?																			
4:47	5:17			093		104	4/14	34°	cloudy, N air	2 1	5:00 6:00				4:31 5:31		5:19 6:19																			
4:46	5:16			092		105	4/15	30°	rain, NE wind	4 2	5:09 6:09				4:59 5:59		5:30 6:30																			
4:44	5:14			078		106	4/16	31°	snow NE br.	5 2	4:58 5:58				4:40 5:40		5:28 6:28																			
4:43	5:13			088		107	4/17	32°	clear, calm	0 0	4:45 5:45	A.M. 7:17 8:17	P.M. 7:15 8:15		4:28 5:28		5:05 6:05	7:09 8:09	7:01 8:01		7:35 8:35														
4:41	5:11	6:43	7:13	073	051	108	4/18	35°	cloudy, calm	2 0	4:30 5:50	7:17 8:17	7:15 8:15		4:19 5:19		4:30 5:30	7:42	8:07		7:50 8:50		7:16 8:16												
4:39	5:09	6:44	7:14	090	040	109	4/19	26°	clear, calm	0 0	4:30 5:34	4:01 5:01	7:15 8:15		4:25 5:25		4:45 5:45	5:40 clump	5:29 8:07	4:35 5:35	5:31 8:31		6:38 7:38												
4:38	5:08	6:45	7:15	067	091	110	4/20	45°	rain, calm	4 0	4:55 5:55	4:45 5:45	7:17 8:17		5:15 5:57		5:15 6:15	4:46 8:06	4:51 8:07	5:51 ?	4:49 7:50		7:06 8:06												
4:36	5:06	6:46	7:16	092	083	111	4/21	42°	cloudy, calm	2 0	090 0	4:32 5:32	7:15 8:15		4:40 5:40		4:55 5:52	4:27 8:07	4:51 8:07	4:47 5:47	5:00 7:55		6:47 7:47												
4:35	5:05	6:47	7:17	092	086	112	4/22	46°	cloudy, SE br	2 1	4:46 5:46	4:37 5:37	7:45		4:47 5:45		4:55 clump	4:43	4:42	4:40	4:55		6:53 7:53												
4:31	5:02			084		114	4/24	46°	rain, E wind	4 2	4:20 5:20				4:10 5:10		4:40 5:40																			
4:26	4:57			075		117	4/27	39°	clear, calm	0 0	? ?				3:55 4:55		4:30 5:30																			
4:25	4:56			081		118	4/28	37°	clear, calm	0 0	? ?				4:05 5:05		4:20 5:20																			
4:19	4:50			100		122	5/2	57°	cloud, calm	2 0	4:30 5:30				3:40 4:40		4:06 5:06																			
4:15	4:47			087		124	5/4	36°	cloudy, NE wind	2 2	4:25 5:25				4:02 5:02		4:05 5:05																			
4:14	4:46			082		125	5/5	34°	clear, calm	0 0	4:14 5:14				3:45 4:45		3:58 4:58																			
4:13	4:45	7:03	7:35	094	064	126	5/6	36°	cloudy, calm	2 0	4:10 5:10	7:08 8:08	7:08 8:08		3:48 4:48		4:07 5:07	7:28 8:28	090	7:13 8:13	7:25 8:25		7:25 8:25												
4:11	4:43			071		127	5/7	42°	cloudy, calm	2 0	3:45 4:45	3:48 4:48	090 0		4:16 5:16	3:46 4:46	4:11 5:11	4:08 5:08	4:20 5:20	4:05 5:05															
4:10	4:42			092		128	5/8	44°	raining, calm	4 0	090 calm				3:50 4:50		4:18 5:18																			
4:09	4:41			094		129	5/9	42°	cloudy, calm	2 0	4:00 5:00				3:50 4:50		4:04 5:04																			
4:08	4:40			096		130	5/10	41°	foggy, calm	3 0 moon 4	4:06 5:06				3:40 4:40		3:59 4:59																			
4:07	4:39			094		131	5/11	55°	foggy, SW br	3 1 moon 4	4:20 5:20				3:05 4:05		4:05 5:05																			
4:04	4:37			061		132	5/12	60°	clear, calm	0 0 moon 4	4:03 5:03				3:07 4:07		3:59 4:59																			
4:03	4:36	7:11	7:44	084	051	133	5/13	59°	clear, calm	0 0 moon 4	3:57 4:57	?	?		3:40 ? 4:40		3:58 8:20 4:58	?	?		4:38 8:30		4:11 5:11												
4:02	4:35			091		134	5/14	60°	clear, calm	0 0 moon 4	? ?	3:40 4:40	090 0		3:40 4:40	3:37 4:37		3:57 4:57	4:05 5:05	4:00 5:00?														
4:01	4:34			080		135	5/15	63°	clear, calm	0 0 1/2 moon 2	3:58 4:58	3:50 4:50			3:28 4:28		3:50 4:50						4:08 5:08												
4:00	4:33			098		136	5/16	60°	rain, SAM	4 X	3:21 4:21				3:43 4:43		3:51 4:51					3:28 4:28												
3:59	4:32			090		137	5/17	56°	clear, calm	0 0	3:18 4:18				3:36(3) 4:36		3:57 4:52					3:52 4:52	4:10 5:10?	4:29 5:29										
3:58	4:31			077		138	5/18	44°	thunder, E wind	4 2 090	0				3:40 4:40		4:08 5:08							?										
3:57	4:30			091		139	5/19	43°	raining, NE wind	4 2 090	0				3:56 4:56		4:36 5:36							?	0	0 090								
3:56	4:29			086		140	5/20	47°	cloudy, N br.	2 1 090	0				3:40 4:40		4:05(3) 5:05						4:05 5:05											

(1) Mangum, very unusual (no barn.)

(3) Indian recorded 4:37

Sheet 2

1st Int of Emy - 1944 (Sheet 2)

A.M. C.T.	S.R.	S.S.	P.M. C.T.	A.M. REL. HUM.	P.M. REL. HUM.	DAY OF THE YEAR	Date	Min Temp	weather	cardinal 40	Pheasant 03	Robin 26	Dove 05	Song Sparrow 48	bluebird 28	Meadow lark 36	Redwing 37	Field Sparrow 47	woodcock 04	Jay 19	P. Martin (night roost) 10	B. Thrasher 25	Batt. Creek 38	white thr. (Brooklyn) 41	Chipping Sparrow 46	warbler Vireo 30	wren 22	Catbird 24	Woodthr. 27	Bluebird 42	Towhee 44	wh. throat mill 34 (Engelhorn)	yellow throat 33	Bobolink 35	Cy. Flycatcher 15	Wood Pewee 17	Bobolink 02	VT 29 Vireo	Kingbird 14	BB Cuckoo 06
USE FOR P.M. AT SHACK ONLY	7:18		7:51	—	066	140	5/20		X		090 0	090 0		7:15 8:15	7:35 8:35			7:25 8:25	7:35 8:35	7:40X 8:40				7:20 8:20			7:30 8:30	7:50 8:50	7:40 8:40		7:30 8:30		7:40 8:40						
3:53	4:28	7:19	7:52	087	090	141	5/21	54°	2 0 cloudy, calm	7:15 8:15	5:45 7:38 4:45	090 0	4:03 7:30 5:03	3:47 4:47	3:50 4:50	3:56 4:56		3:40 7:30 4:40	7:25X 8:25	3:57 4:57			3:57 4:57			4:05 5:05	3:52 7:30 4:52	3:45 8:00 4:45	7:45	4:08 7:37 5:08	3:55 7:35 4:55		7:30		3:45 7:47 4:45	4:25 5:25		4:08 5:08	4:46 7:15 5:45
3:53	4:27			100		142	5/22	58°	foggy, calm	090 0	3:45 4:45	090 0	3:53 4:53	3:45 4:45		3:58 4:58		3:33 4:33	090				3:49 4:49		090 0	3:45 4:45	3:37 4:37	3:50 4:50		3:45 4:45	?	?	?	4:05 5:05	3:45 4:45		3:47 4:47		4:02 5:02	4:02 5:02
3:53	4:27	7:21	7:55	096	072	143	5/23	58°	2 0 cloudy, S. br.	3:26 4:26	×	3:27 4:27	3:47 4:47						7:30X 8:30	3:55 4:55	4:08 5:08	3:50 4:50	4:15 5:15		090 0	3:35 4:35	3:29 4:29	?											
3:52	4:26			092		144	5/24	59°	2 0 cloudy, calm	3:45 4:45	×	3:32 4:32	3:40 4:40							3:50 4:50	4:15 5:15	3:50 4:50	4:35 5:35	Snowbank		3:49 4:49	3:40 4:40					(3:52) (4:52)						450 550	?
3:51	4:25			099		145	5/25	61°	4 0 rainy, calm	3:33 4:33	×	3:36 4:36	3:47 4:47							090 0	3:15 5:15	4:02 (5:02)	4:10 5:10	090 0		3:53 4:53	3:44 4:44	?				(3:59) (4:59)						510 603	1
3:50	4:24			078		146	5/26	62°	0 0 clear, calm	3:57 4:57	×	3:20 4:20	3:50 4:50							3:57 4:59	3:50 4:50	4:03 5:03	4:07 5:07			3:50 4:50	3:40 4:40	?				(3:51) (4:52)						530 630	?
3:50	4:24			078		147	5/27	63°	2 0 cloudy, calm	3:40 4:40	×	3:22 4:22	3:42 4:42							3:49 4:49	3:15 4:15		4:15 5:15			3:47 4:47	3:40 4:40	?				(3:55) (4:55)						450	
3:49	4:23			074		148	5/28	62°	0 0 clear, calm	3:39 4:39	×	3:17 4:17	2:31 4:31							3:44 4:44			4:16 5:16	3:49 4:49		3:47 4:47	3:38 4:38					(3:51) (4:51)						445 545	4:14 5:14
3:48	4:22	7:27	8:01	065	051	149	5/29	64° 65°	0 0 clear, calm	3:44 4:44	×	3:21 4:21	2:30 4:30	?	?	7:35	7:50	7:55	7:49X 8:49	091 S	3:20 4:20		4:24 5:26	7:05	7:30	091 S	7:40	3:53 4:53	3:33 4:33	7:55	7:45	7:55		8:00	7:50		091 S	7:55	7:35
3:48	4:22			091		150	5/30	75°	0 0 clear, calm	?	3:17 4:17	3:48 4:48	3:34 4:34	5:49 ?	?	7:41 4:01	?	3:17 4:17	090 0	090 0		3:46 4:46	3:49 4:49	(?)		3:49 4:46	3:43 4:43	3:17 4:17		3:21 4:21	?	(3:55) 4:55		3:26 4:26	?	090 0		4:15 5:15
3:47	4:21			088		151	5/31	67°	4 X rainy	3:45 4:45	5:49 X cloudy	?	3:50 4:50						090 0	?	?		4:20 5:20	(?)	0 ?		3:55 4:55	3:45 4:45	?				(3:56) (4:50)				0	?	090
3:46	4:21			085		152	6/1	67°	2 0 cloudy, calm	3:17 4:17	×	3:11 4:11	3:52 4:52	×	×	×	×	×	090 0	090 0	?		4:10 5:10	(?)	0 ?	×	3:50 4:50	3:38 4:38	?	×	×	?	(3:47) (4:47)	×	×	?	?	×	0	?	090
3:45	4:20			091		153	6/2	72°	1 0 part cloudy, calm	3:16 4:16	×	3:14 4:14	3:42 4:42	×	×	×	×	×	090 0	3:42 4:42	?		4:07 5:07	(?)	0 ?	×	3:48 4:48	3:26 4:26	?	×	×	?	(3:45) (4:45)	×	×	×	?	×	0	?	090
3:45	4:20			087		154	6/3 ✓	69°	0 0 clear, calm	3:02 4:02	×	3:05 4:05	3:45 4:45	×	×	×	×	×	090 0	3:50 4:50	?		4:06 5:06	(?)	0 ?	×	3:51 4:51	3:36 4:36	?	×	×	?	(3:50) (4:50)	×	×	×	?	×	0	?	090
3:44	4:19	7:31	8:06	081	054	155	6/4 ✓	70°	3 0 hazy, calm	?	3:42 4:42	3:30 4:30	3:31 4:31	3:28 4:28	3:31 4:31	3:37 4:37	?	090 0	090 0	7:55	?	3:50 4:50	3:46 4:46	(?)	7:35	0 ?	3:41 4:41	3:31 4:31	3:27 4:27	3:31 ? 4:31	3:28 4:28	7:50	?	?	4:10 5:10	?	?	3:31 4:31	3:27 4:27	090 0	090 0	3:32 4:32	3:57 4:57
3:44	4:19			072		156	6/5 ✓	52°	1 0 partcloudy, calm	3:22 4:22	×	3:18 4:18	3:53 4:53	×	×	×	5:01	×	090 0	3:46 4:46	3:30 4:30	?	4:10 5:10	(?)	0 ?	×	3:50 4:50	3:37 4:37	?	×	×	?	(3:58) (4:58)	×	×	×	×	×	0	?	090
3:44	4:19			082		157	6/6 ✓	48°	2 1 cloudy, N. breeze	3:26 4:26	×	3:24 4:25	0	×	×	×	×	×	090 0	4:05 5:05	3:25 4:25	?	4:35 5:35	(?)	0 ?	×	4:00 5:00	3:55 4:55	?	×	×	?	(4:05) (5:05)	×	×	×	×	×	0	?	090
3:43	4:18			079		158	6/7 ✓	47°	2 0 cloudy, calm	3:38 4:38	3:30 4:30	3:10 4:20	3:29 4:29	×	×	×	×	×	090 0	3:51 4:51	?	?	4:30 5:30	(?)	0 ?	×	3:51 4:51	3:32 4:32	?	×	×	?	(4:58) (5:05)	×	×	×	×	×	0	?	090
3:43	4:18			072		159	6/8 ✓	56°	2 0 cloudy, calm	3:38 4:38	×	3:20 4:20	3:46 4:46	×	×	×	×	×	090 0	3:53 4:53	3:25 4:25	?	4:11 5:11		4:09 5:09	×	3:50 4:50	3:46 4:46	×	×	×	?	(3:58) (4:58)	×	×	×	×	×	0	?	090
3:43	4:18			095		160	6/9 ✓	52°	4 2 raining, N.wind	4:10 5:10	×	3:45 4:45	4:20 5:20	×	×	×	×	×	090 0	4:12 5:12	?	?	090 0		0	(?)	0 ?	×	4:07 5:07	4:12 5:12	×	×	×	?	(4:26) (5:26)	×	×	×	×	×	0	?	090
3:43	4:18			094		161	6/10 ✓	56°	2 cloudy	?	?	?								4:09 5:09	?	?	4:05 5:05				4:00 5:00					4:07 (5:07)							
3:42	4:17			094		162	6/11 ✓	53°	W.B. 7 0 cloudy, rain	090 0	×	3:25 4:23	3:25 4:25	×	×	×	×	×	090 0	4:06 5:06	1:25 4:25	?	?		0 ?	×	3:44 4:44	3:50 4:50	×	×	×	?	(3:58) (4:58)	×	×	×	×	×	0	?	090
3:42	4:17	7:37	8:12	098	070	165	6/14 ✓	66°	0 0 clear, W. breeze	3:35 4:35	3:41 4:41	0100 0	3:23 4:23	3:39 4:39	3:30 4:30	3:38 4:38	3:20 4:20	3:10 4:10	flew 815 0090	090 0	3:30 4:30	3:30 4:30	3:37 4:35	?	0 ?	3:49 4:39	3:30 4:30	3:23 4:23	3:23 4:23	3:20 4:20	3:30 4:30	8:12X 9:12	4:10 5:10		3:25 4:25	3:20 4:20	3:50 4:50	4:40 5:40	?	090
3:42	4:17			088		166	6/15	68°	0 0 built-in clear, calm	3:27 4:27	3:30 4:30	090 0	3:20 4:20	?	3:23 4:23	3:23 4:23	?	2:56 3:56	090	3:30 4:30	?	?	3:44 4:44	?	0 ?	3:36 4:36	3:34 4:34	3:22 4:22	3:10 4:10	3:10 4:10	3:22 4:22		?		3:12 4:12	3:14 4:14	3:25 4:25	0	?	090
3:42	4:17	7:38	8:13	084	065	167	6/16	66°	2 2 cloudy, N. wind	3:58 4:58	3:36 4:36	090 0	3:37 4:35	3:45 4:45	3:34 4:34	3:45 4:45	7:45	3:30 4:30	090	090 0		3:48 4:48	3:40 4:40	4:10 (5:10)	0 ?	3:42 4:42	3:39 4:39	3:38 4:35	3:30 4:30	3:35 4:35	?	7:45	090	?		3:30 4:30	3:31 4:31	3:51 4:51	3:48 4:48	3:53 4:53
3:42	4:17	7:38	8:13	095		168	6/17	63°	4 X Rain till 1150	4:03 5:03	4:35 5:25	4:21 5:21	4:05 5:05	4:15 5:15	3:55 4:55	4:09 5:09	4:35 5:35	3:55 4:55	090	090 0			4:05 5:05	4:25 5:25	0 ?	4:06 5:06	4:05 5:05	4:00 5:00	?	3:57 4:57	4:20 5:20				4:09 5:09	4:31 5:31	4:55 5:55	6:00 7:00
3:43	4:17			095		169	6/18	63°	2 2 very cloudy, misty	3:56 4:56	×	3:42 4:42	4:06 5:06	×	×	×	×	×		3:06 5:06	?	?				4:12 5:12	4:12 5:12	?	×	×		(4:12) (5:12)	×	×	×	4:12 5:12	×	0	?	090
3:43	4:17			071		170	6/19	54°	2 2 cloudy, S. wind	3:55 4:55	×	3:25 4:25	3:44 4:44	×	×	×	×	×		090 0	?					3:52 4:52	3:59 4:59	?	×	×		(4:00) (5:00)	×	×	×	×	×	0	?	090
3:42	4:17	7:36	8:11	088		163	OMIT 6/12	61°	X X																													
3:42	4:17			089		171	6/20	49°	0 0 clear, calm	3:37 4:37	×	3:20 4:20	3:40 4:40	×	×	×	×	×	090 0	090 0	?	091 S				3:43 4:43	3:47 4:47	?	×	×		(3:55) (4:55)	×	×	×	×	×	0	?	090
3:42	4:17			094		172	6/21	57°	0 0 clear, calm	3:36 4:36	×	3:06 4:06	3:26 4:26	×	×	×	×	×	090 0	090 0	?	090 S				3:41 4:41	3:41 4:41	?	×	×		(3:50) (4:50)	×	×	×	×	×	0	?	090
3:43	4:18			100		173	6/22	68°	3 X cloudy, fog after noon	3:45 4:45	×	3:05 4:05	3:30 4:30				091 S		090 0	090 0	?	090 S			091 S	3:47 4:47	3:30 4:30	S 091	×	×		(3:45) (4:45)	×	×	×	×	×	0	?	090
3:43	4:18			093		174	6/23	67°	3 X cloudy, fog after noon	091 S	×	3:20 4:20	3:43 4:43						090 0	090 0	?	090 S			091 S	3:48 4:48	3:35 4:35	×	×	×		(3:52) (4:52)	×	×	×	×	×	0	?	090
3:43	4:18			081		175	6/24	61°	0 0 clear, calm	091 S	3:44 4:44	? omit	3:35 4:35	×	S 091	×	S 091	×	090 0	090 0	?	091 S			S 091	3:46 4:46	3:30 4:30	?	×	×		(3:43) (4:43)	×	×	×	×	×	0	?	090
3:44	4:19			072		176	6/25	67°	1 1 part cloudy, fog bugs	3:47 4:44	×	3:04 4:04	3:42 4:42	×	×	×	×	×	090 0	090 0	?	090 S			090 0	3:46 4:46	3:26 4:26	?	×	×		(3:48) (4:48)	×	×	×	×	×	0	?	090
3:44	4:19			088		177	6/26	69°	2 X threatening, calm	091 S	×	3:35 4:35	4:01 5:01	×	S 091	S 091	×	S 091	090 0	090 0	?	091 S	4:07 5:07	4:07 4:06	091 S	3:46 4:46	3:46 4:46	4:01 5:01	×	091 S	×		(3:55) (4:55)	×	091 S	091 S	090 S	×	0	?	090
3:44	4:19			087		178	6/27	72°	0 0 clear, calm	091 S	×	3:20 4:20	3:35 4:35	×	×	×	×	×	090 0	090 0	?	091 S	3:55 4:55	3:35 4:35	3:35 4:35	×	×	×		(3:55) (4:55)	×	×	×	×	×	0	?	090
OMIT							6/28	66° not	Cloudy, hot clear, calm	S 091	S	?	S 4:50	×	S	S	S	×	090 0	(S) 5:08	?	S 091	S 5:06	4:40	4:50	×	S	4:40		S	4:40								
3:45	4:20			071		180	6/29	60°	0 0 clear, calm	S 091	×	?	3:40 4:40										3:44 4:44									(3:45) (4:45)								
3:46	4:21			095		181	6/30	56°	3 0 hazy, calm	4:15 5:15	×	3:53 4:39	3:39 4:39	×	091 S	091 S	×	091 S		090 0	090 0	090 0	3:56 4:56	3:30 4:30	?	×	×	091 S					(3:51) (4:52)							
3:46	4:21	7:40	8:15	083	029	182	7/1	68	0 0 clear, calm	091 S	3:57 4:59	3:20 4:20	3:36 4:39	×	×	×	×	×	090 0	090 0	090 0	091 S	090 0	090 0	091 S	3:34 4:33	?	755	805	745	750	805		824		0	090	090
3:47	4:22	7:40	8:15	064	037	183	7/2	55° 74	3 0 hazy, calm	3:50 4:50	3:47 4:47	090 0	3:35 4:35	3:39 4:30	3:40 4:40	3:38 4:38	090	4:14 5:11	4:12 5:12	8:08X 9:10	?	091 S	090 0	090 0	090 0	4:10 5:10	3:42 4:42	3:20 4:20	3:37 4:35	3:40 4:40	3:20 4:20	3:45 4:45	3:30 4:30	4:05 5:05	090 0	3:30 4:30	3:20 4:20	090 0	3:47 4:47	090
3:47	4:22	7:40	8:15	079	043	184	7/3	55° 74	3 0 fog, calm	3:37 4:37	3:50 4:50	091 S	3:45 4:45	3:40 4:40	3:38 4:38	091 S	091 S	3:20 4:20	8:14X 9:14	091 S	?	090 0	090 0	090 0	091 S	4:24 5:24	4:04 5:04	091 S	3:51 4:51	3:27 4:27	3:30 4:30	3:42 4:42	3:20 4:20	3:40 4:40	090 0	3:20 4:20	3:40 4:40	090 0	4:05 5:05	090
3:48	4:23	7:39	8:14	078	038	185	7/4	58° 81	3 0 fog, calm	4:37 5:25	3:51 4:51	5:30 6:30	3:38 4:39	3:45 4:46	3:45 4:45	4:06 5:06	4:31 5:31	4:16 5:16	3:42	090 0	?	090 0	090 0	rally 509	091 S	3:51 4:36	3:27 4:27	?	750	3:25 4:25	3:20 4:20	3:41 4:39	3:45 4:45	090 0	3:40 4:40	3:26 4:26	3:42 4:42	090 0	4:04 5:04	090
3:49	4:24			076		186	7/5	62°	3 0 fog, calm	3:50 4:50	3:57 4:51	3:42 4:42	3:42 4:42	3:50 4:50	3:37 4:51		4:35 5:35	4:16 5:16		090 0		090 0	090 0	7:41 4:41	091 S	3:46 4:46	3:30 4:30	3:25 4:25	3:20 4:30	3:41 4:41		(3:58) (4:58)						0		
3:49	4:24			074		187	7/6	67	4 4 nipcount clear, calm	S 091	×	3:26 4:26	3:52 4:52		S 091		S 091			4:04 5:04		090 0	090 0	omit from pic	S 091	3:47 4:47	?					3:59 (4:59)						0		
3:50	4:25			063		188	7/7	68	4 4 nipcount clear, SE wind	S 091	×	3:25 4:25	3:59 4:59				091 S			3:59 4:59	?	090 0	090 0	omit from pic	S 091	3:59 4:59	3:48 4:48	?	S 091	×	S 091	3:54 (4:54)						0		
3:51	4:26			067		189	7/8	64	2 1 cloudy, SW wind	090 0		3:35 4:35	4:03 5:03							091 S		090 0	090 0			4:01 5:01	3:44 4:44	?				(4:05) (5:05)						0		
3:51	4:26	7:38	8:13	087	047	190	7/9 ✓	64	(after rain) clear, calm	091 S	×	?	3:58 4:58							091 750 S		090 0	090 0	738	S 091	3:55 4:55	3:54 4:54	?				(3:54) (4:54)						0		
3:52	4:27	7:37	8:12	083	063	191	7/10	64	0 0 4 clear, calm, moon	S 091	3:45 4:45	3:27 807 4:27	3:36 937 4:36	091 S			091 S			4:03 5 5:03		090 0	090 0	090 0	091 S	3:53 4:53	3:48 737 4:48	091 S				(3:57) (4:57)						0		
3:54	4:28	7:37	8:11	078	098	192	7/11	66	1 2 part cloudy, calm	3:49 S 4:49	×	3:32 802 4:32	3:49 737 4:49							091 S		090 0	090 0	090 0	S 091	3:50 942 4:50	3:43 752 4:43	090 0				(4:05) (5:05)						0		
3:55	4:29	7:36	8:10	092	056	193	7/12	65	2 2 cloudy, E wind	S 091	S 091	3:43 4:43	4:20 5:20	091 S		091 S	091 S			091 S		090 0	090 0	090 0	S 091	4:07 5:02	3:57 4:57	090 0				(4:12) (5:12)		091 S				0		
3:55	4:29			090		194	7/13	60	0 0 clear, calm	090 0	×	?	3:50 4:50							091 S		090 0	090 0	090 0	S 091	3:50 4:50	3:50 4:50	090 0				(4:06) (5:06)						0		
3:56	4:30	7:35	8:09	080	060	195	7/14	62	0 0 clear, calm	090 0	3:43 4:43	3:33 (3:35) 4:35	3:43 735 4:43	091 S			091 S			4:01 5:01		090 0	090 0	090 0	S 091	3:56 4:56	3:49 4:49	091 S				(4:02) (5:02)		091 S				0		
3:57	4:31			083		196	7/15	65	1 1 part cloudy, calm			4:08 5:08								4:08 5:08		090 0	090 0	090 0	091 S	4:07 5:07	3:55 4:55	090 0				(4:13) (5:13)						0		
3:58	4:32	7:34	8:08	079	044	197	7/16	62 63	0 0 clear, calm, new moon	7:00 S 091	091 S	3:36 090 4:36	4:05 765 5:05	091 S	7:45	090 0	7:20	090 0	7:58 V 090 0	091 S		090 0	090 0	090 0	091 S	4:00 5:00	3:55 4:55	091 S	8:05	7:55	7:45	090 0		7:52	7:55	091 S	7:25	091 S	7:25
3:59	4:33	7:33	8:07	069	091	198	7/17	58° 63	0 0 clear, calm	3:45 4:45	091 S	090 0	3:58 710 4:58	3:58 4:58	3:46 700 4:46	091 S	090 0	3:30 840 4:30	091 S	4:04 740 5:04		090 0	090 0	090 0	091 S	4:13 727 5:13	3:42 754 4:42	3:36 735 4:36		3:54 720 4:54		090 0		3:42 751 4:43		4:25 5:25	3:36 805 4:36	091 S	3:32 726 4:32	091 S
4:00	4:34	7:32	8:06	086	062	199	7/18	65° 61	2 2 fog, calm	3:27 4:19	S 091	090 0	4:04 4:04	3:52 4:52	3:52 4:52	091 S	090 0	4:27 5:27	091 S	0.2 3:47 4:47		090 0	090 0	090 0	091 S	0.4 4:07 5:07	0.3 4:00 5:00	0.0 4:03 4:42	3:41	0.0 4:00 4:44	0.0 4:00 4:44	5:0 4:47 5:47		0.0 4:00 4:55	0.0 4:00 4:55	091 S	0.0 4:00 4:55	0.2 4:00 4:55	091 S
4:01	4:35			080		200	7/19	68° 61	0 0 clear, W. breeze	0.0 3:58	090 0	090 0	0.0 4:55	0.0 3:55 5:00	0.0 4:00	091 S	090 0	0.0 4:47	090 0	0.0 3:47 4:47		090 0	090 0	090 0	091 S	0.4 4:07 5:07	0.3 4:00 5:00	0.0 4:03 4:42	0.0 3:43	0.0 4:00 4:44	0.0 4:00 4:44	5:0 4:47 5:47		0.0 4:00 4:55	0.0 4:00 4:55	091 S	0.0 4:00 4:55	0.2 4:00 4:55	091 S
4:01	4:35			079		201	7/20	54	1 2 part cloudy, N wind	091 S	S 091	0.0 3:52 4:52	0.0 4:04 5:04	S 091		091 S		091 S		0.0 4:01 5:01		090 0	090 0	090 0	091 S	0.4 4:07 5:07	0.3 4:00 5:00	0.0 4:03 4:42	0.0 3:43	0.0 4:00 4:44	0.0 4:00 4:44	5:0 4:47 5:47		0.0 4:00 4:55	0.0 4:00 4:55	091 S	0.0 4:00 4:55	0.2 4:00 4:55	091 S
4:03	4:36	7:30	8:03	073	041	202	7/21	56	0 0 clear, breeze	091 S	×	0.0 4:08 5:08	0.0 4:04 5:04	091 S		091 S		091 S		0.0 4:01 5:01		090 0	090 0	090 0	091 S	0.4 4:07 5:07	0.3 4:00 5:00	0.0 4:03 4:42	0.0 3:43	0.0 4:00 4:44	0.0 4:00 4:44	5:0 4:47 5:47		0.0 4:00 4:55	0.0 4:00 4:55	091 S	0.0 4:00 4:55	0.2 4:00 4:55	091 S
4:04	4:37	7:29	8:02	062	036	203	7/22	61	0 1 clear, W. br.	091 S	×	0.0 4:57	0.0 4:04	091 S		091 S		091 S		0.0 4:01 5:01		090 0	090 0	090 0	091 S	0.4 4:07 5:07	0.3 4:00 5:00	0.0 4:03 4:42	0.0 3:43	0.0 4:00 4:44	0.0 4:00 4:44	5:0 4:47 5:47		0.0 4:00 4:55	0.0 4:00 4:55	091 S	0.0 4:00 4:55	0.2 4:00 4:55	091 S
4:05	4:38	7:28	8:01	086	056	204	7/23	63	4 X raining	0.0 4:26 5:26	090 0	0.0 5:10	6.5 7:00 8:00	×	×					0.2 4:35 5:35		090 0	090 0	090 0	091 S	0.4 4:07 5:07	0.3 4:00 5:00	0.0 4:03 4:42	0.0 3:43	0.0 4:00 4:44	0.0 4:00 4:44	5:0 4:47 5:47		0.0 4:00 4:55	0.0 4:00 4:55	091 S	0.0 4:00 4:55	0.2 4:00 4:55	091 S
4:06	4:39	7:27	8:01	086	037	205	7/24	64°	0 0 calm, clear	0.0 4:13 5:13	091 S	0.0 4:09 (5:00)	0.0 4:55	3:42								090 0	090 0	090 0	091 S	0.4 4:07 5:07	0.3 4:00 5:00	0.0 4:03 4:42	0.0 3:43	0.0 4:00 4:44	0.0 4:00 4:44	5:0 4:47 5:47		0.0 4:00 4:55	0.0 4:00 4:55	091 S	0.0 4:00 4:55	0.2 4:00 4:55	091 S
4:07	4:40			084		206	7/25	69	0 0 clear, calm	4:07 5:07	091 S	4:15 5:15	4:08 5:08	×								090 0	090 0	090 0	091 S	0.4 4:07 5:07	0.3 4:00 5:00	0.0 4:03 4:42	0.0 3:43	0.0 4:00 4:44	0.0 4:00 4:44	5:0 4:47 5:47		0.0 4:00 4:55	0.0 4:00 4:55	091 S	0.0 4:00 4:55	0.2 4:00 4:55	091 S
4:08	4:41	7:25	7:58	096	074	207	7/26	65	4 1 rain, SE breeze	091 S	091 S	4:16 715 5:16	4:16 710 5:16	×			091 S			091 S		090 0	090 0	090 0	091 S	0.4 4:07 5:07	0.3 4:00 5:00	0.0 4:03 4:42	0.0 3:43	0.0 4:00 4:44	0.0 4:00 4:44	5:0 4:47 5:47		0.0 4:00 4:55	0.0 4:00 4:55	091 S	0.0 4:00 4:55	0.2 4:00 4:55	091 S
4:07	4:42			074		208	7/27	69	0 1 clear, W. dew	090 0	×	4:00 5:00	4:28 5:28	091 S	726							090 0	090 0	090 0	091 S	0.4 4:07 5:07	0.3 4:00 5:00	0.0 4:03 4:42	0.0 3:43	0.0 4:00 4:44	0.0 4:00 4:44	5:0 4:47 5:47		0.0 4:00 4:55	0.0 4:00 4:55	091 S	0.0 4:00 4:55	0.2 4:00 4:55	091 S
4:10	4:43			078		209	7/28	57	(Iris at 4th) clear, calm	091 S	090 0	5:01 6:01	4:14 5:14	090 0								090 0	090 0	090 0	091 S	0.4 4:07 5:07	0.3 4:00 5:00	0.0 4:03 4:42	0.0 3:43	0.0 4:00 4:44	0.0 4:00 4:44	5:0 4:47 5:47		0.0 4:00 4:55	0.0 4:00 4:55	091 S	0.0 4:00 4:55	0.2 4:00 4:55	091 S
4:11	4:44			075		210	7/29	60	2 2 cloudy, calm	S 091	×	4:59 5:59	4:16 5:16	091 S								090 0	090 0	090 0	091 S	0.4 4:07 5:07	0.3 4:00 5:00	0.0 4:03 4:42	0.0 3:43	0.0 4:00 4:44	0.0 4:00 4:44	5:0 4:47 5:47		0.0 4:00 4:55	0.0 4:00 4:55	091 S	0.0 4:00 4:55	0.2 4:00 4:55	091 S
4:12	4:45			089

Start of song – 1944 (Sheet 3)

Sheet 3

Sheet 3

A.M. C.T.	S.R.	S.S.	P.M. C.T.	A.M. Rel. Hum.	P.M. Rel. Hum.	DAY OF YEAR	Date	Min Temp	WEATHER Weather	WIND M	Cardinal 40	Pheasant 03	Robin 26	Dove 05	Song Sparrow 48	Bluebird 28	Meadow Lark 36	Redwing 37	Field Sparrow 47	Jay 19	Omit T. Hermit (Nighthawk)	34 Bewick's Wren	Omit White-Throat (Towhee)	Chipping Sparrow 46	Warb. Vireo 30	Wren 22	Hermit Thrush 45	Woodthr. 27	Indigo 42	Towhee 44	Whip-poor-will 09	Myrtle Yellow-throat 33	Gr.-Fly Catcher 15	Wood Pewee 17	Bobolink 02	Red-winged Blackbird 23	Kingbird 14	Baltimore Oriole 43	Nuthatch 21	Y.T. Vireo 29	Woodcock 04
4:19	4:51	7:15	7:47	081	062	216	8/14	72°	calm, clear																															
4:20	4:52	7:14	7:46	087	048	217	8/15	66	calm, clear																															
4:21	4:53	7:12	7:46	088	058	218	8/16	64	NW, clear																															
4:23	4:54	7:11	7:42	086	048	219	8/17	52	calm, clear																															
4:24	4:55			088		220	8/18	59	clear, calm																															
~~4:25~~	~~4:56~~	7:08	7:39	~~076~~	033	221	8/19	(64)																															
4:26	4:57			065		222	8/10	70	clear, S. breeze, 1/2																															
4:27	4:58			079		223	8/11	70	cloudy, NE wind																															
4:28	4:59			079		224	8/12	64	Clear – W.B. report																															
4:29	5:00			058		225	8/13	68	partcloudy, N wind																															
4:30	5:01			085		226	8/14	70	partcloudy, calm																															
4:31	5:02			086		227	8/15	70	NE moving clear, calm																															
4:32	5:03			090		228	8/16	69	cloudy, calm																															
4:35	5:05			091		229	8/17	63	rainy, NE wind																															
4:36	5:06	6:55	7:25	081	041	230	8/18	58	clear, calm																															
4:37	5:07	6:54	7:24	088	044	231	8/19	55	clear, calm																															
4:38	5:08	6:52	7:22	061	067	232	8/20	60	cloudy, calm																															
4:39	5:09			094		233	8/21	64	clear, calm																															
~~4:44~~	~~5:14~~			094		238	~~8/26~~	69																															
~~4:46~~	~~5:16~~			078		240	~~8/28~~	65																															
~~4:49~~	~~5:18~~			091		241	~~8/29~~	56																															
4:50	5:19			087		242	8/30	62	cloudy																															
4:51	5:20			091		243	8/31	56	partcloudy																															
4:52	5:21			078		244	9/1	57°	clear																															
4:53	5:22			090		245	9/2	64	clear, calm																															
4:54	5:23			094		246	9/3	68	cloudy																															
4:55	5:24	6:27	6:56	084	061	247	9/4	65	calm, cloudy																															
4:56	5:25	6:25	6:54	092	063	248	9/5	62																															
4:57	5:26	6:24	6:53	093	049	249	9/6	(58°)	(clear after 3:00) raining																															
4:58	5:27	~~6:23~~	~~6:52~~	092	~~051~~	250	9/7	~~58°~~ 40°																															
5:00	5:29			096		251	9/8	39° 68°	clear, calm																															
5:01	5:30			073		252	9/9	56	part cloudy																															
5:02	5:31			075		253	9/10	60	(fog) clear, calm																															
5:03	5:32			078		254	9/11	60	raining																															
5:04	5:33			094		255	9/12	57	raining																															
5:05	5:34			098		256	9/13	56	raining																															
5:06	5:35			093		257	9/14	52	cloudy, calm																															
5:07	5:36			092		258	9/15	54	cloudy, calm																															
5:08	5:37			088		259	9/16	56	partcloudy, calm																															
10	5:38			090		260	9/17	64	clear, calm																															
12	5:40			084		261	9/18	62	clear, calm																															
13	5:41			074		262	9/19	65	cloudy, calm																															
14	5:42	5:59	6:27	094	084	263	9/20	63	hot, calm, cloudy																															
15	5:43			097		264	9/21	56	clear, NW wind																															
16	5:44	5:55	6:23	088	068	265	9/22	57	clear, calm																															
17	5:45			086		266	9/23	50	raining, E wind																															
19	5:47			086		268	9/25	48	calm, clear																															
20	5:48			072		269	9/26	52	calm, clear																															
21	5:49			096		270	9/27	58	calm, clear																															
23	5:51			091		271	9/28	51	raining																															
24	5:52			075		272	9/29	48	calm, clear																															
25	5:53			097		273	9/30	49	calm, clear																															
27	5:55			081		275	10/2	43	raining																															
26	5:54			090		274	10/1	46	cloudy, SW wind																															
28	5:56			089		276	10/3	48	raining																															
29	5:57			093		277	10/4	52	cloudy, calm																															
30	5:58			094		278	10/5	57	clear, calm, moon																															
32	6:00			094		279	10/6	52	clear, calm, moon																															
33	6:01			068		280	10/7	50	clear, NW wind, moon																															
~~34~~	~~6:02~~			~~076~~		281	10/8	42	cloudy, raining																															
35	6:03			081		282	10/9	39	clear, N wind																															
36	6:04			079		283	10/10	39	cloudy, calm																															
37	6:05			085		284	10/11	38	clear, calm																															
39	6:07			073		285	10/12	36	clear, S. breeze																															
40	6:08			072		286	10/13	44	clear, S breeze																															
41	6:09			088		287	10/14	39	clear, calm																															
41	6:10			087		288	10/15	(35) 26°	clear, calm																															
42	6:11			084		289	10/16	(39) 28°	clear, calm																															
44	6:13			089		290	10/17	(45) 34°	clear, calm, fog																															
45	6:14			069		291	10/18	42	clear, calm																															
46	6:15			082		292	10/19	37	clear, N wind																															
47	6:16			089		293	10/20	40	hazy, calm																															
48	6:17			083		294	10/21	40	clear, N wind																															
50	6:19			092		295	10/22	36	calm, clear, fog																															
51	6:20			059		296	10/23	41	clear, SW wind																															
52	6:21			092		297	10/24	45	calm, clear, fog																															
53	6:22			052		298	10/25	44	clear, SW breeze																															
55	6:24			072		299	10/26	38	clear, calm																															
56	6:25			084		300	10/27	37	clear, calm																															
57	6:26			062		301	10/28	38	clear, calm																															
58	6:27			092		302	10/29	35	clear, calm																															
59	6:28			083		303	10/30	42	clear, calm																															
6:00	6:30			078		304	10/31	51	raining																															

OMIT 1896

OMIT

C = calls Underline = shacks Nov-Dec 1944 - Jan 1945 Sheet 4

A.M. C.T.	S.R.	S.S.	P.M C.T.	A.M. Rel. Hum.	Day of the Year	Date	Min Temp	Weather	Wind	Cardinal 40	Phoebe 03	Redwing 37	Jay 19	Song Sparrow 34	Crow 20	Junco OMIT	OMIT Tree Sparrow	21 Nuthatch	OMIT Chickadee	26 Robin	R.B. 11 Woodpecker	43 Red Finch	Misc.
6:01	6:31			083	305	11/1	48	2 cloudy	X					6:15 c 7:15									
6:02	6:32			085	306	11/2	55	4 raining	X					6:33 c 7:33									
6:04	6:34			083	307	11/3	34	X	X	c 7:15	6:36 7:36	6:56 7:56 c 7:36			c 7:35	c 7:01	7:08	c 7:43	c 7:07	c 7:26	c 7:36		Bobwhite c 7:07
6:08	6:38			079	310	11/6	28	X	X					6:15 c 7:15									
6:09	6:39			078	311	11/7	38	2 cloudy, S breeze	1					6:20 c 7:20									
6:10	6:40			081	312	11/8	48	3 hazy, calm	0					6:21 c 7:21		c 7:15	5						
6:14	6:44			092	315	11/11	39	3 foggy, cloudy	X			0		6:27 c 7:27				c 7:35					
6:15	6:45			088	316	11/12	41	2 cloudy, SE breeze	1			0		6:35 c 7:35		c 7:31	0						
6:17	6:47			082	317	11/13	49	1 partly cloudy, S. air	1	c 7:30				6:24 c 7:24									
6:17	6:48			097	318	11/14	48	4 raining	X					6:38 c 7:35									
6:18	6:49			088	319	11/15	40	X	X					6:30 c 7:30									
6:21	6:52			069	321	11/17	32	2 cloudy, NW br.	1					6:35 c 7:35									
6:22	6:53			087	322	11/18	29	2 cloudy, calm	0	c 7:30				6:31 c 7:31							c 7:29		
6:23	6:54			084	323	11/19	35	2 cloudy, calm	0					6:38 c 7:38									
6:24	6:55			080	324	11/20	35	2 cloudy, calm	0					6:40 c 7:40									[illegible] in Long, S.P. 7:44 Clem, 7:40 Davis
6:26	6:57			087	325	11/21	33	2 cloudy, calm	0	c 7:42				6:44 c 7:44									
6:28	6:59			093	327	11/23	29	5 cloudy, snow	X					6:48 c 7:48									
6:31	~~7:03~~		OMIT	094	330	11/26	32	5 cloudy, snow	X				7:25 8:25		c 8:01	c 7:40		c 7:45	c 7:58		c 8:01		~~Snowing 8:10~~
6:33	7:05			082	332	11/28	27	2 cloudy calm	0					7:05 c 8:05									Many 805, Clem 809
6:34	7:06			093	333	11/29	17	5 cloudy, snowing	X					6:45 c 7:45									
6:36	7:08			067	335	12/1	15	2 cloudy, NW wind	2					7:02 c 8:02									
6:37	7:09			085	336	12/2	11	0 clear, S air	1					6:50 c 7:50									
6:38	7:10			081	337	12/3	18	1 partly cloudy, SE br	1					6:48 c 7:48									
6:39	7:11			089	338	12/4	29	5 cloudy, snow	0 calm					6:52 c 7:52									Brochem: Many 752, Clem ? (absence from Brochem?
6:40	7:12			095	339	12/5	32	5 cloudy, snow	0 calm					6:50 c 7:50									
6:42	7:14			090	340	12/6	26	2 cloudy, calm	0					6:55 c 7:55									
6:42	7:14			090	341	12/7	25	2 cloudy, calm	0					7:00 c 8:00									
6:43	7:15			088	342	12/8	25	1 partly cloudy, calm	0					6:48 c 7:48									
6:44	7:16			077	343	12/9	28	2 cloudy.	X					6:58 c 7:58									
6:45	7:17			080	344	12/10	24	5 snowing	X					7:00 c 8:00									
6:49	7:21			082	348	12/14	9	0 clear calm	0					7:03 c 8:03									
6:49	7:21			083	349	12/15	18	0 clear, calm	0					6:57 c 7:57									
6:50	7:22			074	350	12/16	16	0 clear, NW wind	2					6:59 c 7:59									
6:51	7:23			086	351	12/17	7	3 haze, N. breeze	1					6:58 c 7:58	2 snow								
6:51	7:23			072	352	12/18	0	0 clear, calm	0					7:05 c 8:05	(8:03)								
6:52	7:24			078	353	12/19	7	2 cloudy, calm	0	c 8:00				7:06 c 8:06									
6:53	7:25			078	354	12/20	16	0 clear, S wind	2	c 8:06				7:06 c 8:06	(8:01)								
6:53	7:25			075	355	12/21	-2	0 clear, NW wind	2					7:00 c 8:00									
6:53	7:25			052	356	12/22	-3	2 cloudy, SW wind	2					7:07 c 8:07									4 Sparrows
6:54	7:26			084	357	12/23	1	1 new snow	0					7:07 c 8:07	(8:03)								
6:54	7:26			078	358	12/24	-4	2 cloudy, NW wind	2					7:03 c 8:03	(8:01)								
6:54	7:26			076	359	12/25	-5	2 cloudy, calm	0					7:05 c 8:05									
6:55	7:27			066	360	12/26	-8	0 calm, clear	0					7:03 c 8:03									
6:56	7:28			063	361	12/27	3	5 calm, snowing	0	c 8:06				7:10 c 8:10	(8:16)								
6:56	7:28			083	362	12/28	2	0 clear, calm	0	c 8:00				7:05 c 8:05	(8:09)								
6:56	7:28			093	364	12/30	24	5 snowing, calm	0	c 8:04				7:09 c 8:09	(8:17)								
6:56	7:28			086	365	12/31	12	2 cloudy, clear	X	0				7:12 c 8:12	(8:16)								
6:56	7:28			074	001	1/1	-7	2 cloudy, N wind	2 W. air	090				7:14 c 8:14	(8:14)								
6:57	7:29			090	002	1/2	-12	0 clear, calm	0	090 c 8:17				7:18 c 8:18	almost silent except extreme cricket								
6:57	7:29			074	003	1/3	0	0 clear, calm	0	090 c 8:09				7:09 c 8:09									
6:57	7:29			092	004	1/4	-3	0 clear, calm	0	090				7:08 c 8:08	almost silent								
6:57	7:29			058	005	1/5	-4	2 cloudy, calm	0	090				7:11 c 8:11	silent								
6:56	7:28			080	006	1/6	2	2 cloudy, calm	0	090	091 S			7:10 c 8:11									
6:56	7:28			095	007	1/7	20	2 cloudy, calm	0	090				7:08 c 8:08									
6:56	7:28			094	008	1/8	-6	2 very dark, calm	0	090				7:21 c 8:21									
6:56	7:28			044	009	1/9	-13	2 cloudy, calm	0	090				7:09 c 8:09									
6:56	7:28			076	010	1/10	-1	2 cloudy, calm	0	090				7:13 c 8:13									
6:55	7:27			080	011	1/11	0	2 cloudy, calm	0	090				7:11 c 8:11									
6:55	7:27			081	012	1/12	25	2 cloudy NE air	2 warm	090				7:15 c 8:15	c 8:15								
6:55	7:27			083	013	1/13	22	2 cloudy, new snow	X	090	0			7:11 c 8:11									
6:55	7:26			094	014	1/14	23	2 cloudy, calm	0	091 S*				7:13 c 8:13	first sparrow								
6:55	7:26			084	015	1/15	9	2 cloudy, N. wind	2	090				7:11 c 8:11									
6:54	7:25			074	016	1/16	8	2 cloudy, calm	0	090				7:15 c 8:15									
6:54	7:25			079	017	1/17	9	2 cloudy, calm	0	090				7:04 c 8:04									
6:53	7:24			089	018	1/18	21	5 cloudy, snowing	X	accumulating 091				7:15 c 8:15									
6:53	7:24			084	019	1/19	23	2 cloudy, NW br	1	091 S				7:14 c 8:14									
6:52	7:23			082	020	1/20	23	2 cloudy, calm	0	090				7:11 c 8:11	7:05 c 8:05								
6:51	7:22			083	021	1/21	24	2 cloudy, calm	0	091 S				7:06 c 8:06									
6:51	7:22			083	022	1/22	19	2 cloudy Calm	0	091 S				7:06 c 8:06									
6:50	7:21			090	023	1/23	14	2 cloudy, S wind	2	090 c 8:04				7:11 c 8:11	7:04 c 8:04								
6:49	7:20			076	024	1/24	19	0 clear, calm	0	091 S				7:03 c 8:03									
6:48	7:19			089	025	1/25	15	0 clear, calm	0	7:59		first sparrow		6:57 c 8:00									
6:47	7:18			093	026	1/26	13	5 fog, calm	0	7:54				6:54 c 7:55									
6:46	7:17			091	027	1/27	12	5 cloudy, snowing	0	c 8:07				7:04 c 8:04									
6:47	7:17			081	028	1/28	5	2 cloudy, calm	0	090				7:04 c 8:04	7:04 c 8:04								
6:46	7:16			070	029	1/29	4	0 clear, calm	0	090				6:58 c 7:58	6:58 c 7:58	(Sparrow: first territorial chirp)							
6:45	7:15			068	030	1/30	-1	0 clear, calm	0	090				7:02 c 8:02									
6:44	7:14			061	031	1/31	-6	0 clear, NW air	1	0090 c 7:52				7:06 c 8:06	(almost silent)								
6:42	7:12			083	032	2/1	-4	0 clear N air	1	090				6:58 c 7:58	(almost silent)								

1944
1945

* almost heard 2 territories: Elrich Pavilion, Mrs Kachlein's

Sheet 5

c = call underline = shrub FEB.-MAR. (Civil) 1945 War Time. upper right corner = last evening song

Starting Sept 1 of March Sept at 6pm switch

A.M. Rel. Hum.	P.M. Rel. Hum.	DAY OF THE YEAR	Date	Min Temp.	Weather	Cardinal 40	Phoebe 03	Robin 37	Jay 19	Song Sparrow 24	Crow 20	Junco OMIT	Tree Sparrow OMIT	Nuthatch 21	Chickadee OMIT	Wren 26	R.B. Woodpecker 11	Goldfinch 43	Mourning Dove 12	Robin 13	Song Sparrow 48	E. Meadowlark unsure 36	Bobwhite 05	Wood Pewee 04	Field Sparrow 47	Bluebird 28
A.M. C.T.	S.R.	S.S.	P.M. C.T.																							
6:41	7:11	075	083	2/2	5	clouds, calm	2 0	c 7:52			7:00 c 8:00	c 7:58 (nearly silent)														
6:40	7:10	082	084	2/3	2	clear calm	0 0	6:45 7:45			6:50 c 7:50															
6:39	7:09	094	085	2/4	23	snowing	5 X	090 0	090 0		7:10 c 8:10															
6:38	7:08	089	086	2/5	19	cloudy, SW	2 1				6:52 c 7:52															
6:37	7:07	090	087	2/6	18	cloudy calm	2 0	091 5			6:54 c 7:54															
6:36	7:06	094	088	2/7	17	cloudy, snowing	5 X	091 5			7:80 c 8:80															
6:34	7:04	086	089	2/8	16	cloudy, calm	2 0	c 7:42 6:45 7:45			6:44 c 7:44															
6:33	7:03	084	090	2/9	21	cloudy, SW wind	2 1	6:47 7:47			6:51 c 7:51	6:47 7:47														
6:32	7:02	074	091	2/10	25	cloudy calm	2 0	c 6:50 7:50			6:44 c 7:44															
6:32	7:01	091	092	2/11	17	clear, calm	0 0	6:40 7:40			6:40 c 7:40															
6:30	6:59	091	093	2/12	14	clear, calm	0 0	091 c 7:48			6:48 c 7:48															
6:29	6:58	085	094	2/13	26	hazy, calm	3 0	091 5			6:50 c 7:50															
6:28	6:57	098	095	2/14	30	hazy, calm	3 0	090 c 7:40			6:40 c 7:40															
6:26	6:55	092	096	2/15	29	foggy, calm	3 0				6:42 c 7:42															
6:25	6:54	067	097	2/16	5	clear, NW wind	0 2	091 5			6:38 c 7:38															
6:23	6:52	065	098	2/17	-5	clear, calm	0 0	091 5			6:40 c 7:40															
6:22	6:51	061	099	2/18	-3	clear, calm	0 0	091 5			6:39 c 7:39															
6:20	6:49	067	050	2/19	2	cloudy, calm	2 0	090 0			6:42 c 7:42															
6:19	6:48	090	051	2/20	22	cloudy, calm	2 0	091 5			6:37 c 7:37															
6:17	6:46	090	052	2/21	23	cloudy, calm	2 0	090 0			6:40 c 7:40															
6:16	6:45	087	053	2/22	25	cloudy, new snow	2 X	6:30 7:30			6:35 c 7:35															
6:14	6:43	088	054	2/23	22	cloudy	2 0	091 S			6:30 c 7:30															
6:13	6:42	079	055	2/24	25	clear, calm	0 0	c 7:24 090	091 S	7:00 c 8:00	6:26 c 7:26															
6:11	6:40	076	056	2/25	17	cloudy, calm	2 0	c 7:24 090			6:25 c 7:25															
6:09	6:38	058	057	2/26	5	clear, calm	0 0				6:24 c 7:24															
6:06	6:35	086	059	2/28	21	cloudy, calm	2 0	6:19 7:19			6:20 c 7:20															
6:05	6:34	083	060	3/1	29	cloudy, calm	2 0	6:15 7:15			6:15 c 7:15															
6:03	6:32	086	061	3/2	31	" "	2 0	091 S			6:12 c 7:12															
6:02	6:30	088	062	3/3	23	cloudy, N wind	2 2	6:20 7:20			6:12 c 7:12															
6:01	6:29	092	063	3/4	22	cloudy calm	2 0	6:35 7:35			6:13 c 7:13															
5:59	6:27	094	064	3/5	25	cloudy, calm	2 0	091 c 7:20		6:23 c 7:23	6:13 c 7:13															
5:57	6:25	075	065	3/6	17	cloudy, NW wind	2 2	0.3 6:38 7:08			0.3 6:08 c 7:08															
5:54	6:22	077	066	3/8	22	part cl, calm	1 0	091 S	091 S		0.2 6:02 c 7:02	0.1 6:57 c 6:57 (Crow warble cut 0.4)														
5:56	6:24	082	067	3/7	13	clear, calm	0 0	091 S			0.2 6:04 c 7:04	0.1 6:01 c 7:01														
5:52	6:20	088	068	3/9	26	cloudy, calm	2 0	0.20 6:03 7:03	091 S	091 S	0.11 6:00 c 7:00															
5:50	6:18	088	069	3/10	29	clear, calm	0 0	091 S	091 S		0.04 5:55 c 6:55															
5:49	6:17	082	070	3/11	29	cloudy, W. wind	2 2	0.70 6:06 c 7:06 7:06	091 S		0.06 5:58 c 6:58															
5:47	6:15	084	071	3/12	30	clear, calm	0 0	091 S	091 S		0.07 5:57 c 6:57	0.05 6:50 c 6:50														
5:45	6:13	069	072	3/13	33	Calm clear	0 0	0.02 6:52	091 S		0.02 5:52 c 6:52															
5:44	6:12	072	073	3/14	42	hazy, S. breeze	1 1	091 S	091 S		0.10 5:44 c 6:44	0.10 6:44	0.08 S OMIT 6:42													
5:42	6:10	089	074	3/15	46	cloudy, calm	2 0	091 S			0.04 5:43 c 6:43															
5:40	6:08	092	075	3/16	39	hazy, calm	3 0	6:00 7:00			0.04 5:38 c 6:38	5:25 c 6:25														
5:38	6:06	076	076	3/17	43	hazy, SW wind	3 2	0.15 5:48 6:45			0.05 5:35 c 6:35	0.01 6:38														
5:36	6:04	075	077	3/18	39	hazy, SE wind	3 2	091 S	091 S		0.05 5:37 c 6:37															
5:35	6:03	094	078	3/19	36	clear, calm	0 0	091 S			0.05 5:38	0.01 5:25 c 6:25	0.05 OMIT 5:38													
5:33	6:01	067	079	3/20	33	cloudy, N wind	2 2	091 S			0.10 5:42 c 6:42															
5:31	5:59	067	080	3/21	30	calm, clear	0 0	0.06 5:34 6:34			0.06 5:34 c 6:34		OMIT S													
5:29	5:57	065	081	3/22	37	clear, W. breeze	0 2	091 S			5:24 c 6:24	5:14 c 6:14														
5:28	5:56 6:13 6:41	072 043	082	3/23	47	clear	0 X	0.05 6:25 5:29 7.25 3.5	0.02 5:21	6:40 7:10 10.0	0.05 5:29 6:29	0.01 5:07 c 6:07														
5:25	5:54 6:14 6:43	093	083	3/24	46°	part cloudy	1 X	0.07 5:30	0.01 5:10	0.7 5:40	6:50 7:20		OMIT S													
5:23	5:52 6:15 6:44	094	090	3/25	56°	rain	4 X	090	0.02 5:19																	
5:21	5:50 6:16 6:45	093	059	3/26	52	cloudy, W. breeze	2 1	0.02 6:20	0.04 5:25		0.04 6:25 5:25	.012 6:10		0.04 S												
5:20	5:49	086	086	3/27	49	clear, S. wind, moon	0 1 4	0.25 5:30			0.03 6:19 5:19	-0.012 5:15	OMIT S													
5:18	5:47	082	087	3/28	48	clear, calm, moon	0 0 4	0.07 725 6:24			0.02 6:14 5:14															
5:16	5:45 6:20 6:49	075 043	088	3/29	46	cloudy, calm	2 0	0.04 5:25			0.07 6:28 5:28															
5:14	5:43	083	089	3/30	45	clear, calm, moon	0 0 4	0.02 5:27			0.04 6:13 5:13															
5:12	5:41	084	090	3/31	44	part cloudy, calm	1 0 moon 4	091 S			0.03 6:06 5:06		OMIT S													
5:11	5:40	064	091	4/1	51	clear, W. wind, snow	0 2 4	091 S			0.03 6:04 5:04															
5:09	5:38	081	092	4/2	38	cloudy, W wind	2 2	091 S			0.05 6:14 5:14															
5:07	5:36	076	093	4/3	30	cloudy, calm	2 0	0.15 5:20			0.06 6:13 5:13															
5:05	5:34	097	094	4/4	30	raining, calm	4 0	0.15 5:35			0.05 6:30 5:30															
5:04	5:33	063	095	4/5	28	clear, calm, moon	0 0 4	0.05 5:09			0.06 6:12 5:12															
5:02	5:31 6:29 6:58	053 040	096	4/6	36	part cloudy, S wind	1 2	091 S			0.05 6:10 5:10															
5:00	5:29 6:30 6:59	065 053	097	4/7	43°	clear, S. wind	0 2	0.06 c 8:53 456	0.05 0.012 6:30 446 5.0		0.04 6:15 5:15															
4:59	5:28 6:31 7:00	080 049	098	4/8	46°	calm, clear	0 0	0.015 440	0.012 425	5.0 520	0.04 5:51	0.04 OMIT 6:00	0.3 6:12 512													
4:57	5:26	078	099	4/9	52	clear, S. air	0 1	0.04 451			0.04 5:51 4:51															
4:52	5:21 6:35 7:04	089 053	102	4/12	42	clear, calm	0 0			6:30 15.0	0.04 5:55 4:55															
4:50	5:19 6:37 7:06	094 079	103	4/13	42	X X	X X	6:50 3.0		0.3 6:35 5:20 10.0	0.05 5:48 4:48															
4:41	5:11 6:43 7:13	067 050	108	4/18	32	clear NW wind	0 2	0.05 446		0.3	4:44 5:44															
4:39	5:09 6:44 7:14	064	109	4/17	28	clear, calm	0 0	444			4:43 5:43															
4:38	5:08	094	110	4/20	40	clear, calm	0 0	430	422		0.05 5:35 4:35	0.01 5:25	OMIT 5:38													
4:47	5:17 6:38 7:08	075 061	111	4/14	34°	clear, NE wind	0 2	2.05 6:35 435 0.7	0.02 6:45 445 5.0	0.04 6:35 450 8.0	0.10 5:42 c 6:42															
4:46	5:16	072	112	4/15	33°	cloudy, SE wind	2 2	0.03 446	0.05 457	0.05 457	0.06 5:34 c 6:34		OMIT S													
4:36	5:06 6:46 7:16	094 084	111	4/21	34	X X	X X	2.05 6:50 444 7.0			5:24 c 6:24	5:14 c 6:14														
4:35	5:05	087	112	4/22	40°	raining	4 X	3.03 437	0.02 427	0.05 445	0.05 5:29 6:29	0.01 5:07 c 6:07														
4:33	5:03	078	113	4/23	46	cloudy, S wind	2 2	0.015 422	0.012 412		0.04 5:41 4:41															
4:31	5:02	093	114	4/24	34	raining	4 X	0.015 435			0.05 5:38 4:38															
4:29	5:00	079	115	4/25	34	cloudy, NW wind	2 2	091 S			0.04 5:40 4:40															
4:27	4:58	078	116	4/26	34	cloudy, NE wind	2 2	091 S			0.02 5:24 4:24															
4:26	4:57	078	117	4/27	32°	clear calm	0 0 moon 4	091 S	-0.012 355		0.04 5:22 4:22															
4:25	4:56	083	118	4/28	39	clear calm, moon	0 0 4	091 S			0.04 5:25 4:25															
4:23	4:54	084	119	4/29	37	hazy, calm, moon	3 0 4	3.0 500																		

Field Sparrow	Bluebird	Towhee	E. Towhee unsure	White throat	Phoebe	Thrasher	Wren
44	OMIT 28	16	25	22			

Carolina Wren built nest at Montgomery

Curving flight A.M. - left

Underlined figures are for shade.

May - June 1945. WarTime. (not complete for shade)

Left pencil: daybreaks, nite light. Right pencil sunset, nite light.

Sheet 6

A.M. C.T.	S.R.	S.S.	P.M. C.T.	AM Rel. Hum	PM Rel. Hum	DAY OF THE YEAR	Date	Min Temp. AM	Weather at daylight AM: WEATHER / WIND / MOON	Robin 26	Dove 05	Cardinal 40	Eng. Sparrow 34	Catbird 24	Wren 22	Thrasher 25	Woodcock 04	Field Sparrow 47	Phoebe 03	Bluebird 28	Song Sparrow 48	E. Meadowlark 36	Redwing 37	WT Sparrow OMIT	Chipping Sparrow 46	Phoebe 16	Blue Jay 19	Bobolink 38	Towhee 44	Yellow-throat 33	Wood Thrush 27	Crested Flycatcher 15	Wood Pewee 09	Red-eyed Vireo 41	Warbling Vireo 30	Purple Martin 17	Indigo Bunting 42
4:22	4:53			068		120	4/30	38	Clear, N breeze 3	-0.012	0.03	091	0.04		091	091								091 OMIT												
4:20	4:51			076		121	5/1	38 (82°)	0 0 ½ moon 2 clear, calm	-0.012	0.05	0.2	0.05		1.0									2.0 OMIT												
4:19	4:50	6:59	7:30	094	094	122	5/2	32 (33°) 40	4 2 X raining, N wind	0.012 700	0.04	0.04	0.03		0.2									2.0 OMIT												
4:18	4:49			080		123	5/3	(42°)	2 2 X cloudy, N wind	0.012		0.05	0.05		5.0									2.0 OMIT												
4:15	4:47			075		124	5/4	41	1 2 ¼ moon partcloudy, N wind	0.012	091	2.0	0.04		0.05	091								0.2 OMIT												
4:14	4:46	7:02	7:34	060	036	125	5/5	43	0 0 X clear, calm	-0.012	2.0	0.5	0.05		0.05									2.0 OMIT												
4:13	4:45	7:03	7:35	087	043	126	5/6	50 (46°)	3 1 1 buggy, wain ¼ moon	0.015	0.012	0.04			0.04									4.0												
4:11	4:43	7:04	7:36	085	034	127	5/7	46 (58°)	1 2 X Ptcloudy, SW wind	0.012	0.015	091			0.03									2.0												
4:10	4:42			051		128	5/8	37	0 2 X clear, NW wind				0.03	090	0.2									0.03							091				
4:09	4:41			058		129	5/9	32	0 0 X clear, calm		0.015		0.03	090	0.1									0.02							091				
4:08	4:40			090		130	5/10	33	(rained during night) 2 hazy, calm X	0.015	0.015		0.04	090	0.1									0.03							091				
4:07	4:39			073		131	5/11	38	2 0 X overcast, calm	-0.012	0.05		0.05	090	0.1									0.015							091				
4:04	4:37			094		132	5/12	49	3 0 X foggy, calm	-0.012	0.04	3.0	0.05	091	0.04	091								0.03			0.5								
4:03	4:36			059		133	5/13	44	0 0 X clear, calm	-0.012	0.03		0.5	0	0.04	0.5								0.02			5.0								
4:02	4:35			082		134	5/14	35	4 0 X raining		0.03		0.05		0.03	0.04								0.04											
4:01	4:34			069		135	5/15	39	2 2 X cloudy, NE wind	0.015	0.05		0.15		0.1	0.05								0.05											
4:00	4:33	7:14	7:47	071	067	136	5/16	39	2 2 X cloudy, NE wind	0.012	091	2.0	0.15	091	0.05	091								0.05											
3:59	4:32			091		137	5/17	40	4 2 X raining, NE wind	0.012	0.1	091	0.05	091	0.05	091								0.05											
3:58	4:31	7:16	7:49	062	046	138	5/18	40	0 0 X clear, calm	0.012 725	0.03 730	730	0.07	0.02 740	0.03	0.03	725	740	700	720	715	740	0.05		705		730	0.3							
3:57	4:30	7:17	7:50	084	052	139	5/19	45 38°	0 0 X clear, calm	0.015 725	0.04 745	0.015 730	0.03 735		0.03	0.03	0.02 734	0.012 740	0.03	0.02	720	0.08 710	740	0.05		0.04	0.12	0.10 715	725	720	0.015 730	725				
3:56	4:29			066		140	5/20	54 56°	2 2 X cloudy, SE wind	0.02	0.04		0.03		0.03	0.04	0.03	0.02	0.03	0.02																
3:55	4:28	7:19	7:52	081	068	141	5/21	50	2 1 X cloudy, SW breeze	0.012 750	0.02	0.02	0.05		0.02	0.016									0.05		0.04								
3:53	4:27			080		142	5/22	49	4 2 X drizzle, NW wind	0.012	0.02	0.04	0.04		0.02	0.02																			
3:53	4:27			077		143	5/23	47	3 0 X hazy, calm	0.012	0.03	0.03	0.04		0.04	0.02																			
3:52	4:26			079		144	5/24	52	sunset 0 clear, calm 3	-0.012	0.012	0.015	0.04		0.03	-0.012																			
3:51	4:25			088		145	5/25	56	(haze, moon) 3 cloudy, calm	0.012	0.015	-0.012	0.03		0.03	-0.012																			
3:50	4:24			099		146	5/26	53	(haze, moon) 3 foggy, calm	-0.012	-0.012	0.015	0.04		-0.012	-0.012																			
3:50	4:24			093		147	5/27	60	moon set 0 3 pt. cloudy, calm	-0.012	0.015	0.015	0.04		0.03	-0.012																			
3:49	4:23			084		148	5/28	54	2 2 X cloudy, NE wind	?	0.015	0.015	0.05		0.05																			
3:48	4:22	7:21	8:01	081	051	149	5/29	50	4 full moon 4 calm, clear,	0.012 250	0.012 800	0.02	0.03		0.03	-0.012																			
3:48	4:22			074		150	5/30	44	0 0 X calm, clear	-0.012 708	0.012	0.015	0.03		0.04	0.012																			
3:47	4:21			076		151	5/31	42	2 1 X cloudy, S wbrz.	430	0.015	0.015	0.03		0.04																			
3:46	4:21			096		152	6/1	45	4 Rain at 5:00 X cloudy, NE wind 2	0.012	0.04	0.02	0.05		0.04	0.02																			
3:45	4:20			095		153	6/2	40	4 0 X calm, drizzle	3445	0.02	0.03	0.07		0.05	0.02																			
3:45	4:20			085		154	6/3	38	2 2 X cloudy, NW wind	0.012	0.03	0.03	0.07		0.05	0.03																			
3:44	4:19	7:31	8:06	082	057	155	6/4	38	0 0 1 calm, clear, ½ moon	0.012 855	0.02 735	0.03	0.07	090	0.05 750	0.015 755	0	090	0.3																	
3:44	4:19	7:32	8:07	090	057	156	6/5	7 (47) 40	3 0 X calm, fog	0.015 850	0.03 725	091	507		0.04 740	0.03 803	091	0.03	0.03																	
3:44	4:19			073		157	6/6	38°	0 0 0 clear, calm, ½ moon	0.015	0.02				0.03	0.02																			
3:43	4:18			072		158	6/7	51	1 0 X part cloudy, calm	-0.012	0.012	0.02	0.03		0.04	0.012																			
3:43	4:18			085		159	6/8	54	2 0 X calm, overcast	-0.012	0.04	0.04	0.04		0.07	0.012																			
3:43	4:18			073		160	6/9	54	2 0 X cloudy, calm	-0.012	0.04		0.05		0.05	0.012																			
3:43	4:18			093		161	6/10	52	4 0 X drizzle, calm	?	0.03	0.04	0.05		0.04	0.012																			
3:42	4:17			091		162	6/11	54	2 X X cloudy, raining	0.012	0.07	0.10	0.10		0.10	0.02																			
3:42	4:17			098		163	6/12	53	0 0 X calm, clear	0.012	0.04	0.04	0.05		0.10	0.012																			
3:42	4:17			099		164	6/13	58	X X X	314			458																							
3:42	4:17			087		165	6/14	62	1 1 X pt. cloudy, SW wind	0.012	0.05	0.03	0.05		0.05	0.012																			
3:40	4:17	7:38	8:13	094	093	166	6/15	59	4 Rain at 5:00 4 cloudy, E wind	0.012 801	091	0.03	0.07		0.15	0.012																			
3:40	4:17	7:38	8:13	096	059	167	6/16	58	2 0 X cloudy, calm	0.012	0.05 735	0.25 755	0.10		0.10 745	0.02 810	811	745	090		740	740	740													
3:42	4:17			095		168	6/17	53	0 0 X clear, calm	0.05	0.015	0.05			0.05		0.7	9.0			15.0	15.0	15.0												
3:42	4:17			084		169	6/18	53	0 0 X clear, calm	-0.012	0.05	0.05	0.06		0.05	0.015																			
3:42	4:17			075		170	6/19	53	0 0 X clear, calm	-0.012	0.012	0.03	0.05		0.05	0.03																			
3:42	4:17			049		171	6/20	57	1 0 X part cloudy, calm		0.10	0.05	0.05		0.10																			
3:42	4:17	7:39	8:14	096	042	172	6/21	55	0 0 X clear, calm	0.0158	0.03	0.03	0.07		0.12	0.015																			
3:43	4:18			083		173	6/22	59	0 0 X clear, calm				0.05		0.05																				
3:43	4:18	7:40	8:15	081	052	174	6/23	66	0 0 X clear, calm	0.015 755	0.04 091	0.03 091	0.04 730		0.06 091	0.02 740									725		720								
3:43	4:18			084		175	6/24	66	0 0 X clear, calm	0.012	0.03	0.02	0.07		0.07	0.012									20.0		25.0								
3:44	4:19			083		176	6/25	61	4 X X cloudy, rainy	0.015	0.06	0.02	0.06		0.10	0.015																			
3:44	4:19			074		177	6/26	55	0 0 4 Calm, clear, full moon	0.012	0.04	0.05	0.05		0.07	0.04																			
3:44	4:19	7:40	8:15	088	060	178	6/27	58	4 X X Raining	0.015 800	0.09	0.09	0.09		0.20	0.02																			
3:45	4:20	7:40	8:15	091	082	179	6/28	63	0 1 X clear, SW breeze	0.02 800	0.07	0.04 745	0.12		0.04	0.02																			
				182			7/1	58	cloudy, calm		4.0 845		7.0 840	0.2 900			0	0	1.0 855	0	0	20.0 800	0	10.0 835	S	7.0 540	0	0	absent	20.0 820							
				183			7/2	54	cloudy, calm	0 c850	4.0	0.035	4.0	0.022	12.0		0	0	0.012	0.2	0	0	0.02	18.0	0.05	?	0.30	S	0.05	12.0	0	absent	0.12							
				184			7/3	48	Y4 moon clear calm	0.02	425	0.02	?	0.03	?		0	0	0.012	0	0	0	0.012	416	0.015	418	?	?	5.0	840	0	absent	?							
				186			7/5	68°	part cloudy, calm	0.02	0.07	0.05	0.09	0.11	0.03															0		0.04								
										Robin 26	Dove 05	Cardinal 40	Eng. Sparrow 34	Wren 22	Catbird 24	Thrasher 25	Woodcock 04	Field Sparrow 47	Phoebe 03	Bluebird 28	Song Sparrow 48	E. Meadowlark 36	Redwing 37	Chipping Sparrow 46	Phoebe 16	Blue Jay 19										
				198			7/17		cloudy, wind	0.04 513		2.04 514	1.0 530?	0.07 517	0.07 518															0.04 514								
				199			7/18		part cl. calm	0.20 c 510	1.5 520	0.07 c 505	2.0 525	0.2 510	0.2 510															0.07 505								
				221			8/9		clear, calm	0	0.1 530	0.2 535	0.5 545	2.0 550	0															0.04 525								
				225			8/18		clear calm	0	0.04 525	50.0 608	0.4 542	5.0 600	0															0.04 525								
				231			8/19		clear, calm	0	0.03 530	0	1.0 550	S	0															1.0 550								
				232			8/20		clear, calm	0	0.05 527	0	0.50 552	0	0															0.05 537								
				233			8/21		cloudy, NW wind	0	0.15 555	0	0.50 605	0	0															0.15 555								
				234			8/22		cloudy, calm		0.3 556		2.0 607																	0.10 550								
				235			8/23		clear N br.		0.05 540		1.0 600																								

1945 notes received by A.L. with light recordings in red. These marginal notes are copied on following sheet 7.

WT sang at night. Counted 7 pre robins in area.
Schnizer found young in nest at his house (Cardinal)
WT sang at night

Robin died not defence threshold except in WT

Robin sang on grounds

Cardinal feeding young (fledgling) in bushes

Robin gave one isolated chirping 3:19

Time incorrect 4:30, conduit use last week, 1 hour advanced

Heavy fog, Till 7 AM.

Robin quit 450 – Total 24 min.
Sparrow at house chirped 455, 9 minutes after High School

Robins quit by 450
" " " 505

Cardinal last singing - Robin was 445

Robin gave one isolated chirping 3:19

Counted by pinnacles.
Instrument before alarm: 10 one failed

Robin quit 450 – Total 24 min.
Sparrow at house chirped 455, 9 minutes after High School

Robins quit by 450
" " " 505

Cardinal last singing - Robin was 445

	Yellow-throat 33	Wood Thrush 27	Crested Flycatcher 15	Wood Pewee 09	Red-eyed Vireo 41	Warbling Vireo 30	Purple Martin 17	Indigo Bunting 42
7/1	7.0 540	0	0	10.0 830	0	4.0 845	S	0.1 902	10.0 835
7/2	20.0 825	0.025 440	0.1 910	0.2 905	0.012 0	0.04 845	20.0 830	0.018 110	0.015 800
7/3	?	0.03 432	0.05 441	0.03 435	1.0 459	0.02 446	0.02 416	0.02 422	0.02 335
7/5	Young grosbeaks (fledged) being fed by ♂ 7/10.								
7/17	Zimmerman says last daybreak robin was 7/16								
7/17	No evening song by robins. Daybreak 1 minute.								
7/18	Daybreak song faulted in robins. Catbird faulted								
8/9	2 sparrows very faint. Robin song 8/9, light								
8/13	9 sparrows faint. Bat to 532 (0.1)								

Daybreak 7:20 → S

Last bat 552 (0.7)

8/28: Jay 607 0.07
First bat 8/28 755 0.05, 8/30 8PM 0.02

See p. 258 of Journal for Grouse records also Intern, Cuckoo

Underline - shade

Birdsong - 1945 - WT + CST

Sheet 7

c - cackle

A.M. C.T.	S.R.	S.S.	P.M. C.T.
3:46	4:21	7:40	8:15
3:47	4:22	7:40	8:15
3:47	4:22		
3:47	4:24		
3:50	4:26	7:38	8:13
3:51	4:26	7:38	8:13
3:52	4:27		
3:54	4:28	7:37	8:11
3:55	4:29	7:36	8:10
3:55	4:29	7:36	8:10
3:56	4:30	7:35	8:09
3:59	4:33		
4:00	4:34		
4:07	4:40	7:26	7:59
4:08	4:41	7:25	7:58
4:09	4:42	7:24	7:57
4:10	4:43	7:23	7:56
4:11	4:44		
4:25	4:56	7:08	7:39
4:26	4:57		
4:27	4:58	7:06	7:37
4:28	4:59		
4:29	5:00		
4:37	5:07		
4:38	5:08		
4:39	5:09		
4:40	5:10		
4:41	5:11		
4:42	5:12	6:46	7:16
4:43	5:13	6:44	7:14
4:44	5:14	6:42	7:12
4:46	5:16		
4:47	5:17	SUNRISE	
4:52	5:21	6:32	7:01
4:53	5:22	6:31	7:00
4:54	5:23	6:29	6:58
4:55	5:24		
5:00	5:29	6:20	6:49
5:01	5:30		
5:04	5:36	6:08	6:37
5:08	5:37		
5:24	5:52	5:42	6:10
5:25	5:53		
5:30	5:32	5:32	6:00
5:32	6:00		
5:39	6:07		
5:40	6:08		
5:40	6:09		
5:47	6:16		
5:48	6:17		
6:05	6:35		

A.M. Rel. Hum.	P.M. Rel. Hum.	DAY OF THE YEAR	D	Temp	Weather
XXX	065	182	7/1	58°	cloudy, calm
080	053	183	7/2	57° 60°	cloudy, calm
082		184	7/3	48°	clear, calm
085		186	7/5	68°	part cloudy, calm
076	078	189	7/8	64°	clear, calm
080	058	190	7/9	60°	clear, calm
069		191	7/10	49°	clear, w. br.
088	042	192	7/11	64°	clear, calm
066	067	193	7/12	60° 71°	cloudy, w. wind
086	062	194	7/13	55°	clear, calm
087	039	195	7/14		
069		198	7/17		cloudy, wind
078		199	7/18		part cloud, calm
073	042	206	7/25	75°	clear, calm
080	044	207	7/26	60° 70°	clear, calm, moon
083	053	208	7/27	55° 75°	clear, calm, moon
092	066	209	7/28	58° 67°	calm, partly cloud
088		210	7/29	53°	calm, haze, moon
091	052	221	8/9	66°	calm, mostly clear
077		222	8/10	?	calm, mostly clear
090	066	223	8/11	60° 74° 61°	cloudy, calm
097		224	8/12		foggy, calm
094		225	8/13		clear, calm
090		231	8/19		clear, calm
086		232	8/20		clear, calm
081		233	8/21		cloudy, NW wind
092		234	8/22		cloudy, calm
087		235	8/23		clear, N. br.
XXX	058	236	8/24	68°	cloudy, light rain
091	049	237	8/25	50° 64°	clear, calm
086	055	238	8/26	50° 66° 62°	heavy fog, calm
064		239	8/27		calm, clear
093		240	8/28		
078	080	244	9/1	68°	calm, clear
086	049	245	9/2	50° 58°	calm, clear, fog
088	060	246	9/3	56° 65°	calm, clear
072		247	9/4	66°	cloudy, SW wind
093	061	251	9/8	70°	clear, calm
093		252	9/9	?	clear, calm
096	070	258	9/15	55° 40°	clear, calm
089		259	9/16		clear, calm
089	078	272	9/29	28° 38°	clear, calm
086		273	9/30	24°	calm
094		278	10/5	52°	clear, calm
087		279	10/6	?	clear, calm
074		285	10/12	42°	clear, calm
091		286	10/13	30°	clear, calm
083		287	10/14	29°	clear, N. breeze
062		293	10/20	41°	clear, N. breeze
083		294	10/21	43° 17°	hazy, N. breeze
072		308	11/4		clear, SW wind

Song Sparrow 48 — Field Sparrow 47 — Cardinal 40 — Robin 26 — Bluebird 28 — Woodcock 04 — Dove 05 — Pheasant 03 — Oriole 38 — Redwing 37 — Towhee 44 — Phoebe 16 — R.B. Cowbird 41 — Warbling Vireo 30 — Crested Flycatcher 15 — Eastern Meadowlark 36 — English Sparrow 34 — Pewee 17 — Bluejay 19 — Bittern 08 — House Wren 22 — Chippy 46 — No. Yellow Throat 33 — Whip-poor-will 09 — Catbird 24 — Wood Thrush 27 — Indigo Bunting 42 — Bl. & Wht. Creeper 25 — Brown Thrasher 25

	SR	SS
Song Sparrow	48	
Field Sparrow	47	
Cardinal	40	
Robin	26	
Bluebird	28	
Woodcock	04	
Dove	05	
Pheasant	03	
Oriole	38	
Redwing	37	
Towhee	44	
Phoebe	16	
R.B. Cowbird	41	
Warbling Vireo	30	
Crested Flycatcher	15	
Eastern Meadowlark	36	
English Sparrow	34	
Pewee	17	
Bluejay	19	
Bittern	08	
House Wren	22	
Chippy	46	
No. Yellow Throat	33	
Whip-poor-will	09	
Catbird	24	
Wood Thrush	27	
Indigo Bunting	42	
Bl. & Wht. Creeper	25	
Brown Thrasher	25	

Ruffed grouse - not heard

SS	SR	SS	SR	SS	SR	SS	SR	SS	SR	SS	SR
7/1	7/2	7/2	7/3	7/8	7/10	7/11	7/12	7/12	7/13		

Zimmerman says last daybreak robin was 7/16

7/17 No evening song by robin. Daybreak 1 minute

7/18 Daybreak song faded in robin. Card. failed.

8/9 Sparrows very faint. Robins sang, 8/9, flight

8/13 Sparrow faint

See p. 258 of journal for Groton records also Bittern, Cuckoo

CT. 600 — SS 5 32 — RH 094 — DY 278 — 10/5

Sheet 8

Blocking 1946 CST Mark Statistics

Sheet-Identified	Temp. Dew Point	Date	Time A.M. Rel. Hum.	Time P.M. Rel. Hum.	Time of Sunrise	Time of Sunset	Daylight Time

A.M. S.T.	SR SS	P.M. S.T.	SR SS

Cassiopeia	Lyra	Ursa Major	Cepheus	Draco	Ursa Minor	Cygnus	Aquila	Pegasus	Andromeda	Perseus	Auriga	Gemini	Taurus	Orion	Canis Major	Canis Minor	Hydra	Leo	Ursa Major	Boötes	Corona Borealis	Hercules	Ophiuchus	Serpens	Aquila	Sagittarius	Scorpius	Libra	Virgo	Bootes	Corvus	Crater	Hydra	Centaurus	Lupus	Ara	Triangulum Australe

Cassiopeia	Lyra	Ursa Major	Cepheus	Draco	Ursa Minor	Cygnus	Aquila	Pegasus	Andromeda	Perseus	Auriga	Gemini	Taurus	Orion	Canis Major	Canis Minor	Hydra	Leo	Ursa Major	Boötes	Corona Borealis	Hercules	Ophiuchus	Serpens	Aquila	Sagittarius	Scorpius	Libra	Virgo	Bootes	Corvus	Crater	Hydra	Centaurus	Lupus	Ara	Triangulum Australe

Sheet-Identified	Temp. Dew Point	Date	Time A.M. Rel. Hum.	Time P.M. Rel. Hum.	Time of Sunrise	Time of Sunset	Daylight Time

A.M. S.T.	SR SS	P.M. S.T.	SR SS

Cassiopeia	Lyra	Ursa Major	Cepheus	Draco	Ursa Minor	Cygnus	Aquila	Pegasus	Andromeda	Perseus	Auriga	Gemini	Taurus	Orion	Canis Major	Canis Minor	Hydra	Leo	Ursa Major	Boötes	Corona Borealis	Hercules	Ophiuchus	Serpens	Aquila	Sagittarius	Scorpius	Libra	Virgo	Bootes	Corvus	Crater	Hydra	Centaurus	Lupus	Ara	Triangulum Australe

Cassiopeia	Lyra	Ursa Major	Cepheus	Draco	Ursa Minor	Cygnus	Aquila	Pegasus	Andromeda	Perseus	Auriga	Gemini	Taurus	Orion	Canis Major	Canis Minor	Hydra	Leo	Ursa Major	Boötes	Corona Borealis	Hercules	Ophiuchus	Serpens	Aquila	Sagittarius	Scorpius	Libra	Virgo	Bootes	Corvus	Crater	Hydra	Centaurus	Lupus	Ara	Triangulum Australe

Shack - underlined Birdsong 1946 - CST October - December Sheet 9

A.M. C.T.	S.R.	S.S.	P.M. C.T.
5:30	5:58	5:32	6:00
5:32	6:00	5:30	5:58
5:34	6:02		
5:40	6:08		
5:47	6:16		
5:56	6:25		
5:57	6:26		
6:01	6:31		
6:05	6:35		
6:06	6:36		
6:17	6:47		
6:21	6:52		
6:24	6:55		
6:28	6:59		
6:32	7:04		
6:47	7:19		
6:53	7:25		
6:53	7:25		
6:54	7:26		
6:55	7:27		
6:56	7:28		

A.M. Rel. Hum.	P.M. Rel. Hum.	Day of the Year	Date	Temp. at Sunrise	Weather at Daybreak (Weather, Wind, Age)	Cardinal 40 SR	Cardinal 40 SS	English sparrow 34 SR	English sparrow 34 SS	Crow 20 SR	Crow 20 SS	Woodcock 04 SR	Woodcock 04 SS	Blue jay 19 SR	Blue jay 19 SS	Song sparrow 48 SR	Song sparrow 48 SS	Pheasant 03 SR	Pheasant 03 SS	Bat OMIT SR	Bat OMIT SS	Quail 02 SR	Quail 02 SS	White-th. sparrow OMIT SR	White-th. sparrow OMIT SS	Fox sparrow OMIT SR	Fox sparrow OMIT SS
074	042	278	10/5	54°	0 0 × Clear, calm					0.08 540		0.03 531	0.012 611	?		0.04 533		c530 550	0.03 1.0	0.025 520		0.08 c540		0.03 530			
080		279	10/6	52°	0 S. wind Clear, calm					2.0 552		0.03 531		090 0		0.02 526		0.10 537		0		080		0.02 525			
094		281	10/8		3 × × Warm, foggy									0.02 540													
087		286	10/13	26°	3 0 × Cloudy, calm					0.3 556		0.03 542		090 0		0.02 534		0.03 542		0		090 0		0.02 539			
098		293	10/20	25°	0 0 × Clear, calm													X 0.04 c552				0.04 552					
093		300	10/27	38°	2 0 × Cloudy, calm							0.03 555		090 0		090 0		X 0.10 c605		0		0.035 55	0			0.05 600	
093		301	10/28		3 × × Cloudy, fog									0.2 610													
085		305	11/1	46°	3 0 × Cloudy, calm			√0.25 627						0.15 620										0			
076		308	11/4	35°	0 0 × Clear, calm			√0.25 621		×		×				×		×				×		0			
087		309	11/5	37°	0 0 × Clear, calm			√0.20 622		×		×		0.18 620		×		×				×		0			
092		317	11/13	34°	0 0 × Clear, calm			√0.10 619				×		0.10 620		×		×				×		×			
080		321	11/17	10°	0 0 × Clear, calm	090 0				090 0		(090) 0		?		090 0		090 0		0		090 0		0			
098		324	11/20	35°	3 fog 0 × Clear, calm	0.10 c632		√0.12 634		×		×				×		×		×		×		x			
084		327	11/23	15°	0 0 × Clear, calm	0.18 635		0.18 √637																			
089		331	11/27	32°	0 0 × Clear, calm	0.07 090 c639		√0.18 644																			
098		346	12/12	42°	3 fog 0 × Fog, calm			√0.15 701						0.15 709													
100		355	12/21	30°	2 × new × Cloudy, snow			√0.10 702																			
087		356	12/22	20°	2 × × Cloudy	090		√0.15 707																			
083		357	12/23	32°	2 0 × Cloudy, calm	0.12 c704		√0.12 703																			
070		360	12/26	12°	0 2 × Clear, N. wind	090		√0.12 703																			
079		362	12/28	22°	2 2 × Cloudy, NW wind	0.16 c706		√0.32 721 (after rain)																			

Underlined figures are checks. Birdsong for 1947, CST

Sheet 10

A.M. C.T.	S.R.	S.S.	P.M C.T.	A.M. Rel. Hum.	P.M. Rel. Hum.	DAY OF THE YEAR	Date	Min. Temp AM	Weather at Daybreak WEATHER WIND MOON	Cardinal 40	Eng Sparrow 34	Bluejay 19	Pheasant 03	M. Dove 05	Robin 26	Redwing 37	E. Meadowlark 36	Woodpecker 04
6:56	7:28			077		001	1/1	0°	2 Cloudy, calm O X	√0.20 c717	√0.22 720							
6:57	7:29			097		002	1/2	12°	3 Cloudy, calm O X	√0.12 c714	√0.28 724							
6:57	7:29			089		003	1/3	8°	2 Cloudy X O		√0.28 720							
6:57	7:29			081		004	1/4	12°	Clear, Calm O X		(0.30) √715							
6:56	7:28			088		006	1/6	18°	Cloudy, Calm O X		√0.16 711							
6:56	7:28			089		007	1/7	20°	2 Cloudy, Calm O X		√0.20 710							
6:56	7:28			080		008	1/8	28°	0 full moon Clear Calm 4 091 S 2		√0.18 709							
6:56	7:28			080		009	1/9	16°	0 full moon Clear, Calm 4 c708	√0.18	√0.10 704	090						
6:56	7:28			081		010	1/10	26°	2 Cloudy, Calm O X c706	√0.09	√0.10 707	0						
6:55	7:27			088		011	1/11	34°	1 1/2 moon 2 Cloudy, Warm 705	√0.12	√0.12 704	090						
6:55	7:27			088		012	1/12	13°	0 0 X Clear Calm		√0.14 703	1.0 c722						
6:55	7:27			098		013	1/13	28°	5 O X Cloudy, snowy		√0.07 715							
6:55	7:26			094		014	1/14	35°	2 X X Cloudy		√0.07 715							
6:55	7:26			086		015	1/15	30°	0 1/4 moon 1 Clear Calm 091 S		√0.12 709							
6:54	7:25			092		016	1/16	15°	1/8 moon 1 Clear Calm c705	√0.05	√0.10 709							
6:54	7:25			073		017	1/17	20°	0 1/8 moon Clear Calm O		√0.05 701	(1.0) c725						
6:53	7:24			088		018	1/18	24°	0 1/2 moon Clear Calm 091 S		√0.05 669	1.0 c722						
6:53	7:24			073		019	1/19	32°	0 0 X Clear Calm 091 S		√0.05 703	0.9 c719						
6:52	7:23			083		020	1/20	33°	2 1 X Cloudy, W. wind c712	√0.07	√0.04 706	080						
6:51	7:22			075		021	1/21	-6°	2 2 X Cloudy, N wind		√0.50 716							
6:51	7:22			062		022	1/22	+1°	0 0 X Clear Calm	√0.15 707	√0.15 707							
6:50	7:21			076		023	1/23	26°	2 2 X Cloudy, S. wind		√0.05 659							
6:49	7:20			084		024	1/24	35°	0 1 X Almost clear, W breeze 700	(0.05)	(0.05) √700							
6:48	7:19			090		025	1/25	35°	2 S.Sw X Calm, Cloudy		(0.05) √659	0.20 708						
6:47	7:18			081		026	1/26	30°	0 0 X Clear Calm	p.03 654	√0.05 659							
6:46	7:17			086		027	1/27	30°	1 1 X pt cloudy, S air 658	√0.05	√0.05 658							
6:47	7:17			075		028	1/28	20°	0 1 X Clear, W air c705	(0.2)	(0.05) 652	(1.5) 718						
6:46	7:16			075		029	1/29	22°	2 X X Cloudy, NW wind		(0.18) 714	704						
6:45	7:15			098		030	1/30	22°	2 X X Cloudy, 18" snow c709	(0.15)	(1.0) 721	709 (1.8) 725						
6:44	7:14			087		031	1/31	11°	0 1 X Clear, N. air c656	√0.2	√0.2 657	658						
6:42	7:12			080		032	2/1	2°	X X X		(0.15) √700	656						
6:32	7:02			097		041	2/10	4°	0 2/3 moon 2 Clear calm Warm		√0.05 643	647						
6:32	7:01			091		042	2/11	10°	0 1/2 moon 2 Clear Calm 638	√0.05	√0.05 638							
6:30	6:59			098		043	2/12	15°	0 1/3 moon 1 Clear Calm 634	(0.04)	√0.05 642							
6:29	6:58			087		044	2/13	25°	1 2 1/4 moon 1 pt cloudy SW br 635	(0.03)	√0.05 639							
6:28	6:57			088		045	2/14	32°	2 0 X Cloudy calm 626	√0.02	√0.04 638 637	0.5 653						
6:26	6:55			084		046	2/15	25°	2 0 X Cloudy, calm 640	√0.03	√0.05 641 646							
6:25	6:54			083		047	2/16	23°	2 0 X Cloudy, Calm 642	√0.04	√0.05 641 644							
6:23	6:52			087		048	2/17	30°	2 2 X Cloudy, S. wind 635	√0.03	√0.07 639 642	(0.3) 648						
6:22	6:51			073		049	2/18	8°	0 X Clear, NW br 631	√0.05	√0.04 634 629							
6:20	6:49			077		050	2/19	0°	0 0 X Clear Calm 091 S		√0.40 633 640							
6:17	6:46			086		052	2/21	15°	2 0 X Cloudy, Calm 618	√0.02	(0.05) 634							
6:16	6:45			083		053	2/22	5°	3 0 X Clear Calm 621		646							
6:14	6:43			078		054	2/23	5°	2 0 X Cloudy, Calm 090 0		635							
6:13	6:42			089		055	2/24	15°	3 2 X Cloudy, N wind 091 S		√2.0 635 645							
6:11	6:40			084		056	2/25	21°	5 2 snowing X Cloudy, NW breeze 622	√0.04	?							
6:09	6:38			088		057	2/26	20°	2 1 X Cloudy, Warm 615	√0.03	√0.50* 630 627	628						
6:08	6:37			093		058	2/27	7°	0 1 X Clear, W. air 610	√0.025	√0.20 624 626							
6:06	6:35			090		059	2/28	7°	0 1 X Clear, Warm 605	√0.018	√0.5 627 628 624	0.5 628						
6:05	6:34			082		060	3/1	5°	0 0 X Clear calm 604	√0.018								
6:03	6:32			086		061	3/2	13°	2 2 X Cloudy, NW wind 608	√0.02								
6:02	6:30			091		062	3/3	18°	2 2 X Cloudy, NW wind 610	√0.028	√0.15 621 616							
6:01	6:29			086		063	3/4	19°	0 0 X Clear calm 612	√0.03	√0.4 622 615							
5:59	6:27			081		064	3/5	13°	0 0 X Clear calm 556	√0.018	√0.25 617 614							
5:57	6:25			093		065	3/6	20°	0 1 X Clear, Warm 603	√0.025	√0.20 614 612							
5:50	6:18			092		069	3/10	20°	0 0 3/4 moon 3 Clear, Calm 554	√0.02	√0.3 612 608							
5:49	6:17			085		070	3/11	27°	2 1 X Cloudy, SE air 604	√0.03	√0.3 615 609	616						
5:47	6:15			030		071	3/12	32°	2 1 X Cloudy, S air 554	√0.02	√(0.2) 614 607	615						
5:45	6:13			095		072	3/13	35°	4 X X Raining	√0.02	602	555						
5:44	6:12			079		073	3/14	25°	2 0 X Cloudy, Calm 542	√0.015	√0.4 614 603							
5:42	6:10			081		074	3/15	15°	1 2 1/4 moon 1 pt cloudy, NW wind 555	√0.05	√1.0 616 605							
5:40	6:08			083		075	3/16	14°	0 1/4 moon Calm Clear 1 540	√0.018	√0.5 607 600							
5:38	6:06			077		076	3/17	10°	0 1/8 moon Calm Clear 0 538	√0.015		090						
5:36	6:04			087		077	3/18	16°	0 0 X Calm Clear	√0.02 538	√0.5 601 554							
5:35	6:03			092		078	3/19	20°	0 0 X Clear Calm	√0.015 522	√0.3 554 553							
5:33	6:01			084		079	3/20	27°	0 0 X Clear Calm	√0.03 540	√0.2 548 550							
5:31	5:59			096		080	3/21	30°	2 new snow 0 Cloudy, Calm X	√0.015 533	√0.25 586							
5:28	5:56			094		082	3/23	36°	0 0 X Clear calm	√0.012 520		605	0.012 515					
5:25	5:54			096		083	3/24	40°	3 2 X Drizzle NE wind	√0.02 535	√0.10 555 554							
5:23	5:52			086		084	3/25	22°	2 2 NW wind X new snow, cloudy	√0.04 535								
5:21	5:50			076		085	3/26	15°	0 0 X Clear Calm	√0.015 522								
5:20	5:49			084		086	3/27	18°	0 0 X Clear calm	√0.015 520	0.04 545 537 538							
5:18	5:47			096		087	3/28	30°	X 2 X windy, new snow	0.02 530	?							
5:16	5:45	6:20	6:49	080	054	088	3/29	29°	2 2 X Cloudy NW wind	√0.02 521	0.5 545 534							
5:14	5:43			071		089	3/30	12°	0 0 X Clear calm	√0.012 511	525		-0.012 503					
5:12	5:41			092		090	3/31	31°	2 2" new snow X Cloudy, SE air	√0.02 520	√0.5 544 532		×					

W.B. records show following events during observation period alt

Day silent 700 - 735

Day gunpoint about 740 called 745

New development of light lowered light threshold (Sunrising, very dark)

Summary am

Back to normal threshold

Heard w cardinal via W Bay w/ whole row pheasant drive

Sparrow flushed from row 703 (0.07) but not on two prior times.

First cardinal song heard at 2222 Vine Ave

Swap pair of gunps up, but silent, at 710 (0.4).

Sleep near an inch 18" deep. All birds late. Colder, but birds less depressed.

Squirrel out at 635 (0.02) before cardinal sang

Squirrel out at 630 (0.02) before cardinal, my bird silent till 7:15. 631 bird first to settle, my bird silent. Virginia's bird 6:25.

} Light meter out of order

Depressed by wind

Female cardinal seen and heard singing at office 8:30 AM

Virginia's Cardinal began 535.
Rain depressed time 8 minutes. No change in light.
Female cardinal seen to sing at office 12:45.
Cardinal depressed 13 min. (.035 FC) by cold and wind.

Pheasant silent

Cardinal depressed for no visible reason.

Note perching on extreme celeb. 2" snow.
Robin chirped but no song.

Robin arr 3/17

Dove arr 3/19

Redwing arr 3/20

E. Meadowlark arr 3/31

* Readings by Dow W Johnson 2028 Univ. Ave

* " " Wachelin McNeil 3610 Lakeview Road

(3)

Underlined figures are shacks.

Birdsong for 1947 CST

Sheet 11

A.M. C.T.	S.R.	S.S.	P.M. C.T.	AM Rel. Hum.	PM Rel. Hum.	Day of the Year	Date	Min. Temp AM	Weather at Daybreak: Weather	Wind	Moon	Pheasant 03	Owl 05	Robin 26	Cardinal 40	Sparrow 34	Redwing 37	Meadowlark 36	Woodcock 04	Crow 20	Song Sparrow 48	Field Sparrow 49	Bluebird 28	Day 19	Catbird 24	Br. Thrasher 25	Yellowthroat 33	Towhee 44	Wren 22	Grackle 02	Grackle SR 11	Dove 38	Cardinal 15	Chipping 46
5:11	5:40			096		091	4/1	36°	4	0	X		0.015	0.015	0.02	0.2																		
									druggle. Calm				523	523	528	547																		
5:09	5:38			096		092	4/2	35°	3	0	X		0.015	0.015	0.015	0.15																		
									foggy calm				514	516	516	542																		
5:05	5:34			093		094	4/4	35°	4	X	X		-0.012	0.015	0.015	0.3																		
									rain				445	509	509	540																		
5:02	5:31			072		096	4/6	35°	2	2	X			0.02	090	0.2																		
									cloudy NW gale					515	0	532																		
5:00	5:29			088		097	4/7	32°	0	X	4			0.012	0.012	0.2																		
									clear full moon					455	455	520	510																		
4:59	5:28			082		098	4/8	35°	2	moon obscured			-0.012	-0.012	-0.012																		
									cloudy calm	0			415	445	415	508																		
4:57	5:26	6:32	7:01	082	065	099	4/9	36°	2	0	X		0.003	0.003		0.05	520	0.1		0.10	0.02					0.02								
									cloudy calm				437	437	?	520	508	648		645	655					653								
4:55	5:24	6:33	7:02	093	078	100	4/10	35°	4		X	091	0.4		0.2		518	0.03	0.2		0.015	0.07					0.015							
									rain, SW wind			S	637		641	?	090	525	646		521	650					700							
4:54	5:23	6:34	7:03	086	069	101	4/11	46°	2	2	X	0.02		091	0.015	0.04		091			0.02	0.03	0.012		0.02								
									cloudy SW wind			458		S	454	507		S			501	655	447		501								
4:52	5:21	6:35	7:04	069	061	102	4/12	20°	0	1/2 moon	2	090	0.12		0.015	091	515		0.07	0.07	0.015	0.07	0.015	1.0	0.02	0.12		0.12					
									clear NW wind			0	653	?	453	S		0.4	655	656	453	656	455	645	455	653		653						
4:50	5:19	6:37	7:06	086	050	103	4/13	18°	0	0 1/2 moon	1	0.002	0.03	0.012	0.7	0.018	3.0	0.015		0.03	0.7	0.04	0.10	0.02	0.03	0.002	0.05	0.02	091	091	(S)			
									clear calm			420	700	438	640	446	630	444	091	454	640	458	650	449	700	420	654	449	S	3				
4:47	5:17	6:38	7:08	073	044	104	4/14	35°	0	1/3 moon	1	0.003	0.5	0.005	4.0	0.07	0.05	0.015	2.0	0.03	0.5	0.15	0.10	0.015	0.05	0.003	0.03	0.015	090	0.03	090	0.07		
									clear calm			429	647	435	630	500	659	445	640	457	647	506	655	445	657	426	782	443	0	453	0	500		
4:46	5:16			083		105	4/15	30°	4		X	091		0.012		0.015		0.02		?		091		0.012	0.03	0.005		0.02					
									druggle NE wind			S		451		455		503				S		451		447		504					
4:44	5:14			093		106	4/16	35°	X	rain	X			0.012		0.012		0.02															
									2" rain					450		445		458															
4:39	5:09	6:44	7:14	088	072	109	4/19	(30°)	2		X	X									0.04												
									(cloudy)												657												
4:38	5:08			083		110	4/20	24°	0	0	X	0.005		0.015		0.010				0.10				0.015		0.015		0.02					
									calm clear			424		438		432		?		450				432		438		442					
4:37	4:38	6:52	7:23	066	034	116	4/26	(60°)	2	2	X		722														712						
									cloudy SW wind												706												
4:01	4:34	7:13	7:46	076	047	135	5/15	(60°)	3	X	X										0.03												
									hazy, pt. cloudy												735												
4:00	4:33			075		136	5/16	410	0	0	X	0.025		0.02		090		0.025			0.025			0.03		0.015	-0.012		0.03	0.5	1.0	0.3	0.02	
									clear, calm	1/8 moon		359		354		0		359			359			401		349	342		409	416	425	415	357	
3:59	4:33	7:15	7:48	088	078	137	5/17	(46°)	4		X										0.15												
									druggle												715												
3:58	4:32	7:16	7:49	070	058	138	5/18	(66°)	0	0	X		0.025		091						0.06												
									clear, calm				738		S						729											0.02	
3:51	4:25	7:23	7:57	075	045	145	5/25	59°	0	0	X										737											740	
									clear, calm												0.04												
3:48	4:22	7:28	8:02	072	045	150	5/30	(46°)	0	0	X										749												
									clear, calm												0.04												
3:47	4:21	7:28	8:02	079	044	151	5/31	(65°)	0	0	X										747												
									clear, warm												0.06												
3:43	4:18	7:34	8:09	089	088	158	6/7	69°	X	X	X										753												
																					0.015	203											
3:43	4:18	7:34	8:09	091	065	159	6/8	64°	X	X	X										945	806											
																					090												
3:42	4:17	7:38	8:13	091	043	167	6/16	(55°)	2	0	X		0.07		0.15	(5.0)	091		0.5		0	0.2	(0.025)	0.04		0.04		(0.07)		091				
									cloudy calm				800		705	S			745			750	805	902		802		806		S					
3:48	4:23			082	050	185	7/4	64°	0	2	X	0.05		0.02		0.02				0.05	0.03		-0.012	-0.012	0.03	0.015		0.015	0.02	0.025	0.05	090	090	090	
									clear, SW wind			355		339		339				358	346		325	320	346	325		335	340	343	358	0	0	0	(Bat 356 (0.03) (Yndigo 358, 0.05) (Grosbeak 400, 0.08)
3:58	4:32			093	061	197	7/16	65°	0	0	X	0.5		0.015		0.03					0.04		0.012	-0.012		-0.012		0.012	0.02	0.02	0.012	1.0	090	090	090	
									clear, calm			421		344		354					401		< 340	329		337		342		353	340	426	090	090	091	(Wash. Vireo 400, 0.08)
3:52	4:27	7:38	8:13	086	058	166	6/15	61°	0	0	X				0.04																		
									calm, clear						805																		
3:42	4:17			085	047	168	6/17	60°	2	0	X				0.03																		
									cloudy calm						345																		
3:39	4:33			092	047	198	7/17	60°	3	0	X	(0.7)		0.02	0.015	(0.03)		091			(0.05)	0.02	-0.012		090	0.025		090	0.015	0.012	0.03	0.04	090	090	090	
									clear (fog) calm			432		349	343	356		S			409	346	325		0	351		0	349	339	353	404	0	0	0	(Pewee 339 (0.012), (Wash. Vireo 417 (0.2) (Yndigo 425 (0.5)
4:00	4:34	7:32	8:06	086	077	199	7/18	58°?	2		X		0.04		091	0.015					0.025		-0.012		0.02	0.02		0.012	0.012	0.02	0.012	090	090	090	
									cloudy calm			500		412	S	345		S			406	?	330	422	0.02	359		0	349	349	359	342	0	0	0	
4:01	4:35			067	054	201	7/20	65°	X	X	X					350																		
4:03	4:36			080	045	202	7/21	58°	X	X	X					345																		
4:07	4:40			081		206			0	0	X	1.5		0.02	091	0.025					0.07	091	0.012											
		Time Correction					7/25	69°	clear, calm			440		358	S	400					417	S	342											
4:08	4:41			074		207	7/26	68°	2	1	X	090		091	0.012	091					0.1	0.015	-0.012											
									cloudy, sw br			0		S	401	S					421	405	350											
4:11	4:44			079		210	7/29	78°	X	X	X					410																		
4:12	4:45			082		211	7/30	81°	X	X	X					413																		
4:17	4:49			094		215	8/3	64°	0	full moon	4	090		0.018	091	0.015					50	0.012	-0.012					0.02	0.04	090	091	091		
									clear, ground fog			0		411	S	409					450	407	350					415	435	0	S	S		
4:19	4:51			090		216	8/4	67°	0	full moon	4	0.5		0.07		1.5					0.5	0.015	-0.012					0.018	0.3	0.6	?	1.0		
									clear, calm			440		415		500					438	408	345					411	434	446		455		
4:26	4:57			082		222	8/10	63°	0	1/2 moon	2	090		0.012		090					0.05	0.018	0.012					0.018	1.0	0.15	091	091		
									clear, calm			0		404		0					430	417	403					417	454	434	S	S		
4:27	4:58			086		223	8/11	64°	0	1/4 moon	1	090		0.012		090					0.07	0.02	-0.012					090	0.05	090	090			
									clear, calm			0		407		0					424	420	400					0.015	430	091	S	090		
4:36	5:06			079		230	8/18	74°	0	0	X	090		0.02		090					0.05	0.015	0.018					414		091	090	090		
									clear, hot			0		434		0					445	0.015	430					424		S	0	0		
4:46	5:16			091		239	8/27	45°	X	0	X	090		091	090	091					1.0	1.8	0.02					0.02		090	090	090		
									cool, calm			0		S	0	S					503	503	420					424		0	0	0		
5:47	6:16			068		293	10/20	60°	0		X				0.03						0.03												
									calm, clear						548						548												
5:48	6:17			078		294	10/21	55°	0	0	X				(0.04)	(0.10)					2.0												
									calm, clear						600	605					621												
5:50	6:19			084		295	10/22	56°	0	0	X										0.02												
									calm, clear												554												
5:51	6:20			077		296	10/23	54°	1	2	X										0.02												
									wind clear												555												
5:53	6:22			095		298	10/25	55°	0	2	X				090	(0.25)					silent												
									calm, cloudy						0.15	615					0.03												
5:55	6:24			095		299	10/26	58°	4	0	X				614		(0.03)				610												
									calm, cloudy								614				0.02												
5:56	6:25			088		300	10/27	60°	3		X				090	(0.05)					616												
									calm, drizzle						0.02	620					0.03												
5:57	6:26			089		301	10/28	50°	1		X				(0.018)						618												
									calm, clear						601						0.025												
5:58	6:27			097		302	10/29	50°	2	0	X				(0.015)	(0.025)	(0.08)				615												
									calm cloudy						558	silent	611				0.025												
5:59	6:29			095		303	10/30	50°	2	0	X				090	(0.045)					0.015												
									calm very cloudy						(0.03)	620					600												
6:00	6:30			091		304	10/31	?	0	2	X				615	(0.06)					0.03												
									calm, cloudy						090	616					616												
6:01	6:31			089		305	11/1	50°	0	2	X				090	(0.05)					0.03												
									calm, cloudy						0.02	622					622												
6:02	6:32			094		306	11/2	40°	2	1	X	652			604																		
									NE wind cloudy																								
6:04	6:34			098		307	11/3	43°	0	0	X				090	(0.02)					0.07												
									calm, clear						607	616					616												
6:05	6:35			097		308	11/4	50°	4	0	X					(0.07)					0.03												
									calm, drizzle							622					618												
6:06	6:36			092		309	11/5	50°	1	0	X					(0.06)					0.025												
									calm, almost clear						090	620					615												
6:08	6:38			088		310	11/6	40°	0	2	X				(0.02)	(0.06)					0.025												
									calm, cloudy						616	622					618												
6:09	6:39	OMIT		093		311	11/7	26°	2	2	X										Omit	silent up to											
									NW wind cloudy																								
6:11	6:41			073		313	11/9	19°	2	2	X				(0.035)																		
									NW wind, cloudy						634																		
6:13	6:43			068		314	11/10	32°	2	0	X					(0.07)																		
									calm, cloudy							636																		
6:14	6:44			084		315	11/11	17°	0	2	X					(0.20)																		
									NW wind clear							639																		
6:15	6:45			081		316	11/12	25°	1		X				090	(0.06)																		
									sun partly clear						0	636																		
6:18	6:49			095		319	11/15	20°	2	2	X				(0.03)																		
									NW wind cloudy						637																		
6:19	6:50			089		320	11/16	20°	2	2	X				(0.03)																		
									NW wind cloudy						090 637																		
6:21	6:52			079		321	11/17	26°	2	0	X				?	0.06																		
									cloudy, calm							640																		
6:22	6:53			092		322	11/18	20°	1	0	X				?	0.06																		
									part cloudy, calm							636																		
6:23	6:54			091		323	11/19	33°	2	0	X				0.025	0.03																		
									cloudy, calm						635	637																		
6:24	6:55			092		324	11/20	36°	2	0	X				002	003																		
									cloudy, calm						639	644																		
6:26	6:57			078		325	11/21	38°	2	2	X				002	0.035																		
									cloudy, NE wind						643	655																		
6:27	6:58			096		326	11/22	33°	5	0	X				0.015	0.04																		
									suburbs, calm						643	655																		
6:28	6:58	OMIT		085		327	11/23	6°?	0	0	X				?	X																		
									clear calm																									
6:29	7:00			099		328	11/24	29°	2	0	X				0.05	0.06																		
									snow, calm cloudy						653	659																		
6:30	7:01			098		329	11/25	18°	2		X				0.04	0.06																		
									cloudy, NW wind						651	655																		
6:32	7:04			092		331	11/27	18°	5	0	X				?	0.03																		
									snowing calm							6:58																		
6:33	7:05			086		332	11/28	3°	0	0	4				?	0.04																		
									clear, calm, full moon							6:50																		
6:34	7:06			087		333	11/29	0°	0	0	4				090	0.03																		
									clear, calm, full moon						C 6:50	6:47																		
6:35	7:07			083		334	11/30	-4°	0	0	X				090	0.04																		
									clear, calm						silent	6:54																		
6:36	7:08			077		335	R/1	12°	1	2	4				090	0.03																		
									Pt cloudy, W. wind, full moon						silent	6:58																		
															40	34																		
																					19												

Female card. singing 8 AM. Doe soaring

Saw woodcock in Runcleello yard.
Cardinal sang since 415, interrupted till 450 (0.012)

Cardinal nest at 2135 Van Hise. 3 eggs Apr. 21

Pewee 339 (0.012), (Wash. Vireo 417 (0.2) (Yndigo 425 (0.5)

24 17 Pewee 42 Vireo

02 29 30 Vireo

Whitethroats sang Time.
" 557 (0.03)
" 557 (0.03)
" call 600 (0.025) song 601 (0.025)

whitethroat 613 (0.03) call
card. silent, 1 unco 618 (0.025) WT song 620 (0.03)
1 unco chip 601 (0.015) Flicker 620 (0.15)

W.T. call 616 (0.025)

1 unco 614 (0.015)

Barred owl 627 (0.02)

1 unco - 635 (0.015)
" 644 (0.04)
goldfinch 649 (0.03)

no underline = Madison
Underline = shack

A.M. C.T.	S.R.	S.S.	P.M. C.T.	A.M. Rel Hum	P.M. Rel Hum	Day of the Year	Date	Min. Temp. A.M.	Weather at Daybreak	19 Blue Jay	34 E. Spar	40 Cardinal	20 Crow	26 Robin	05 Dove	28 Bluebird	04 Woodcock	48 Song Sp.	03 Pheasant	36 Meadowlark	47 FIELD SPARROW	37 REDWING	02 BOB-WHITE
6:38	7:10			088		337	12/3/47	33°	2 1 X Cloudy W. air	0.03 7:02	0.025 7:00	090											
6:39	7:11			079		338	12/4	29°	2 2 X Cloudy E. wind		0.03 7:02												
6:40	7:12			097		339	12/5	32°	2 1 X Cloudy W. air		0.03 7:02												
6:42	7:14			094		340	12/6	18°	2 0 X Cloudy calm		0.03 7:00												
6:42	7:14			093		341	12/7	32°	2 X X Cloudy		0.03 7:10												
6:43	7:15			080		342	12/8	22°	2 2 X Cloudy NW wind		0.035 7:06												
6:47	7:19			095		346	12/12	18°	5 0 X Snowing calm		0.03 7:09												
6:48	7:20			092		347	12/13	20°	3 0 X Cloudy calm		0.03 7:12	090											
6:49	7:21			078		348	12/14	26°	1 1 X Partly cloudy NW breeze		0.025 7:06	090											
6:49	7:21			083		349	12/15	25°	2 1 X Cloudy, NW breeze		0.025 7:05	090											
6:50	7:22			077		350	12/16	2°	1 1 X partly cloudy NW air		0.025 7:03												
6:51	7:23			080		351	12/17	20°	0 1 X Clear, S. air		0.025 7:03	090											
6:51	7:23			071		352	12/18	10°	2 0 X Cloudy calm		0.025 7:02	090											
6:52	7:24			095		353	12/19	20°	2 0 X cloudy calm		0.03 7:07												
6:53	7:25			094		354	12/20	15°	2 " 0 X		0.035 7:05	090											
6:53	7:25			089		355	12/21	21°	2 " 0 "		0.025 7:06												
6:53	7:25			093		356	12/22	18°	2 " 0 X		0.025 7:05	090											
6:54	7:26			088		357	12/23	15°	0 0 X Clear, calm		0.03 7:04	0.03 7:03	0.02 7:01										
6:54	7:26			093		358	12/24	10°	2 0 X Cloudy calm		0.025 7:04	090											
6:54	7:26			092		359	12/25	24°	2 " 0 "		0.03 7:12												
6:55	7:27			086		360	12/26	16°	0 0 X Clear, calm		0.02 7:06	090											
6:56	7:28			087		361	12/27	20°	0 " 0 "		0.02 7:05												
6:56	7:28			083		362	12/28	10°	0 " 0 "		0.02 7:08	0.02 7:08											
6:56	7:28			087		363	12/29	15°	2 0 X Cloudy, calm		0.02 7:12												
6:56	7:28			081		001	1/1/48	20°	2 2 X Cloudy, NE wind		0.02 7:15												
6:57	7:29			072		002	1/2	18°	2 0 X Cloudy, calm		0.02 7:09												
6:57	7:29			092		003	1/3	20°	X X X		0.025 7:13	090	0.02 7:10										
6:57	7:29			083		004	1/4	20°	0 2 1 Clear W. wind 1/4 moon		0.025 7:07	090											
6:56	7:28			083		006	1/6	16°	0 1 X Clear, W. breeze		0.018 7:08												
6:56	7:28			079		007	1/7	10°	0 1 X Clear, S. air		0.02 7:07	0.018 7:05											
6:56	7:28			091		008	1/8	24°	2 1 X Cloudy S. air		0.018 7:04	090	0.018 7:07										
6:53	7:24			087		019	1/19	5°	2 2 X cloudy W. wind		0.05 7:20												
6:51	7:22			069		022	1/22	-10°	0 1 X Clear, NW air		0.02 7:06												
6:50	7:21			057		023	1/23	-11°	0 X X Clear			091											
6:49	7:20			055		024	1/24	XX	X X X		0.02 7:10	090											
6:48	7:19			067		025	1/25	0°	2 1 X cloudy S. air		0.018 7:07												
6:47	7:18			074		026	1/26	0°	0 0 X clear, calm		0.018 7:03												
6:46	7:17			057		027	1/27	-17°	0 1 X clear, W. breeze		0.015 6:59	090											
6:47	7:17			059		028	1/28	-12°	0 1 X clear, SW air		0.018 7:00	090											
6:46	7:16			069		029	1/29	1°	0 " 1 X "		0.015 6:58												
6:45	7:15			081		030	1/30	13°	2 1 X cloudy, SW air		0.02 7:01												
6:44	7:14			085		031	1/31	10°	5 1 X Snowing SW air		0.015 7:01												
6:42	7:12			083		032	2/1	5°	0 X 2 Clear, 1/2 moon		0.015 6:55	091											
6:41	7:11			086		033	2/2	22°	1 X 1 pt. cloudy 1/4 moon	0.025 7:04	0.015 6:54												
6:40	7:10			072		034	2/3	-2°	2 0 X cloudy, calm		0.015 6:53	090											
6:39	7:09			088		035	2/4	-5°	2 1 X cloudy, NW air		0.015 6:57												
6:38	7:08			092		036	2/5	-2°	2 1 X cloudy, W. air		0.015 6:52	090											
6:37	7:07			087		037	2/6	2°	0 1 X clear, NW air		0.015 6:51		0.02 6:58										
6:36	7:06			087		038	2/7	16°	5 1 X Snowing SE air		0.015 6:52												
6:34	7:04			072		039	2/8	-10°	0 1 X clear, N. air		0.015 6:49												
6:33	7:03			053		040	2/9	-12°	0 0 X st. cloudy calm		0.014 6:48												
6:32	7:02			071		041	2/10	-2°	2 0 X cloudy, calm		0.015 6:47	7:26											
6:32	7:01			079		042	2/11	20°	2 0 " cloudy		0.015 6:50												
6:30	6:59			076		043	2/12	0°	0 1 X clear, NW air		0.013 6:46												
6:29	6:58			093		044	2/13	12°	2 0 X cloudy calm		0.013 6:46	090											
6:28	6:57			082		045	2/14	18°	2 2 X cloudy, NE wind		0.015 6:46	091											
6:26	6:55			064		046	2/15	0°	0 01 0 X clear, calm		0.013 6:41	0.013 6:41											
6:25	6:54			070		047	2/16	31°	0 1 X clear, S. air		0.013 6:35	090											
OMIT						049	2/18	XX	X X X			?											
6:16	6:45			087		053	2/22	5°	1 0 X partly cloudy calm		0.013 6:35												
6:14	6:43			084		054	2/23	18°	1 " 0 " X S. air		0.015 6:29		0.015 6:29										
6:13	6:42			099		055	2/24	36°	4 1 X drizzle E. br		0.015 6:34	090	0.013 6:28										
6:11	6:40			092		056	2/25	35°	2 1 X cloudy W. air		0.015 6:30	091											
6:09	6:38			090		057	2/26	32°	0 1 3 clear, W. air, 3/4 moon		0.013 6:26		0.013 6:25										
6:08	6:37			091		058	2/27	33°	3 2 X cloudy E. wind		0.015 6:35		0.014 6:28										
6:06	6:35			096		059	2/28	35°	5 0 X Snowing calm		0.014 6:31	090	0.019 6:33										
6:05	6:34			090		060	3/1	20°	5 0 X " "		0.03 6:43												
6:03	6:32			090		061	3/2	20°	5 0 X " "		0.019 6:30	7:00											
6:02	6:30			084		062	3/3	20°	0 0 X clear calm	0.02 6:31	0.015 6:24												
6:01	6:29			078		063	3/4	1°	0 6 1 clear, calm, 1/4 moon	0.04 6:25	0.04 6:26	091	0.014 6:16										
5:59	6:27			080		064	3/5	2°	0 0 X clear, calm		0.015 6:19	0.014 6:12											
5:57	6:25			080		065	3/6	22°	2 1 X cloudy, SW air	6:35	0.018 6:17	091											
5:56	6:24			094		066	3/7	20°	2 0 X cloudy, calm		0.013 6:16		0.013 6:16										
5:54	6:22			087		067	3/8	20°	2 1 X cloudy, NW air		0.014 6:14	091											
5:52	6:20			078		068	3/9	2°	0 0 X clear, calm		0.014 6:10	7:00											
5:50	6:18			058		069	3/10	-4°	2 2 X cloudy, NW wind		0.015 6:09	0.015 6:07											
5:49	6:17			040		070	3/11	-13°	0 0 X clear, NW br.		0.013 6:08	091											
5:47	6:15			054		071	3/12	-11°	0 0 X clear, calm		0.013 6:04	091											
5:41	6:12			089		073	3/14	27°	0 2 X clear, SW wind	0.015 6:08		6:30	0.015 6:08										
5:42	6:10			083		074	3/15	33°	1 0 X pt. cloudy, calm		0.015 5:40	0.015 5:40											
5:40	6:08			097		075	3/16	34°	2 1 X cloudy, NW br.	0.016 6:08	0.014 6:05												
5:38	6:06			097		076	3/17	31°	1 0 X pt. cloudy, calm	0.019 6:03	0.015 5:55	0.013 5:50											
5:36	6:04			082		077	3/18	XX	X X X														
5:31	5:59			094		080	3/21	46°	2 0 X cloudy calm	0.019 5:40		0.013 5:30	0.019 5:40										
5:29	5:57			092		081	3/22	25°	0 1 X clear, SW air														
5:28	5:56			097		082	3/23	XX	X X X														
5:16	5:45			074		088	3/29	40°	2 2 X cloudy, SW wind	0.014 5:28		0.012 5:25	0.014 5:28										
5:05	5:34			071		094	4/4	48°	1 2 X pt. clear, S. wind	0.02 5:14		0.02 5:14											
4:54	5:23			094		101	4/11	60°	2 2 X cloudy, W wind														
P.M. ONLY		6:40	7:10		038	106	4/16	XX	X X X														
4:43	5:13			081		107	4/17	XX	X X X	0.06 4:58		0.03 4:31	0.4 5:07										
4:37	5:09			065		109	4/19	XX	X X X														
A.M. & P.M.	4:38	5:08	6:45	7:15	083	063	110	4/20	XX	X X X	0.03 4:54		0.02 4:50										

Robin	Dove	Bluebird	Woodcock	Song Sp.	Pheasant	E. Meadowlark	Field Sparrow	Redwing	Bobwhite
26	05	28	04	48	03	36	47	37	02
	091	091							
091	091								
091		0.03 5:49	-0.012 5:22	0.013 5:30					
091									
5:15									
0.012 5:25	-0.012 5:20	0.012 5:23	090	-0.012 5:20	-0.012 5:20				
0.03 5:18	0.013 5:03			-0.012 4:56	0.012 4:59		0.018 5:10		
0.012 4:54	0.04 4:59		090	-0.012 4:49	-0.012 4:43	0.02 5:07	0.013 4:56		
6:30			0.02 7:01						
0.015 4:37	0.012 4:34		0.015 4:40	-0.012 4:25	-0.012 4:25		0.012 4:34	0.02 4:47	
0.014 4:38	0.012 4:35	0.013 4:26	0.013 4:36		0.08 4:15		0.012 4:35		5.0 5:32
0.014 4:48	0.012 4:40	0.012 4:44	0.014 4:45	0.012 7:10 4:32			-0.012 4:39		

Last of A.L.'s observations was Woodcock on P.M. of 4/20/48

"Pin-Up" Tally of Day on which Cardinal Sings - 1946, 1947.

X song heard
✓ - absent or failed to get outside
M-Madison

Jan. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 Feb. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 Mar. 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Alexander, Joe.	Madison	47
Anderson, Harry	Madison, Maple Bluff	46
Bassett, Katherine	Madison	46
Bergseng, Margaret	Campus	46
Beyer, Otto	Briggsville	46
Bryan, Mrs. & S.	Madison	46
Butzen, Tom	Shack	46
	Arboretum	46
Derleth, August	Sauk City	46
Easum, Prof.	Madison	46
Ellis, Bob	Fish Hatchery	46
Gastrow, Albert	Prairie du Sac	46
Huffer, Mrs. C.M.	Madison	47
Kruse, Harold	Reedsburg	46
McCabe & Thompson	Arboretum	46
McCabe, Marie	Madison	46
Ochesky, Louis	Portage (in town)	46
(Burrian, Mrs. O.	Columbia Co. Caledonia	46
Perry, Mildred	Reedsburg	46
Porter, L. P.	Evansville	46
Rintlemann, G.	Wis. Rapids	46
Rogers, Harry	Madison	47
Spence, Virginia	Madison	46
		47
Turk, Russell	Black Earth	46
Wagner, Conrad	Mt. Horeb	46
Walker, J. T.	Baraboo	46
	county surrounding	46
		47
Van Hoosen, Russell	farm in Sauk Co	46

no song at all

heard no song

no complete song

(neg.) but not including

Menasha

Nakoma

Big Blizzard

7 AM

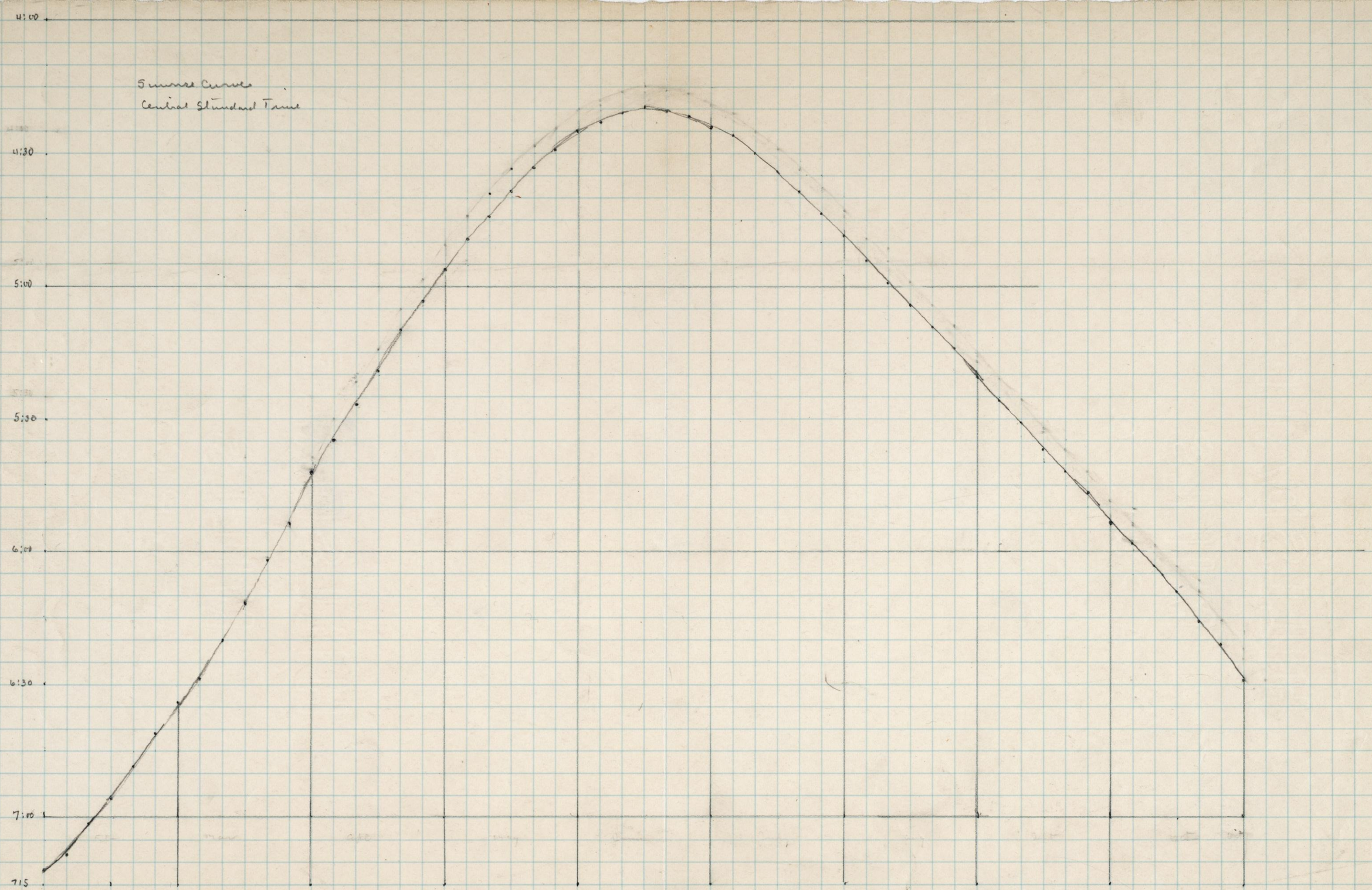
8:41 7:55 6:30 6:40

6:35 6:40 7:05

Prairie du Sac Madison

M. M. M.

Sunrise Curves
Central Standard Time



(16a)

January February March April May June July August September October

War C.S.
Time Time

4:00 – 3:00
4:30 – 3:30
5:00 – 4:00
5:30 – 4:30
6:00 – 5:00
6:30 – 5:30
7:00 – 6:00
7:30 – 6:30
8:00

CARDINAL
daybreak song
daybreak call
daybreak moon

rain
fog
calm
moon
rain
SUNRISE
cloudy
N.E. wind
cloudy
cold
windy
snow
cold
clear
cloudy
No Song
heavy
Song - but not at daybreak

Figure 2 (a)

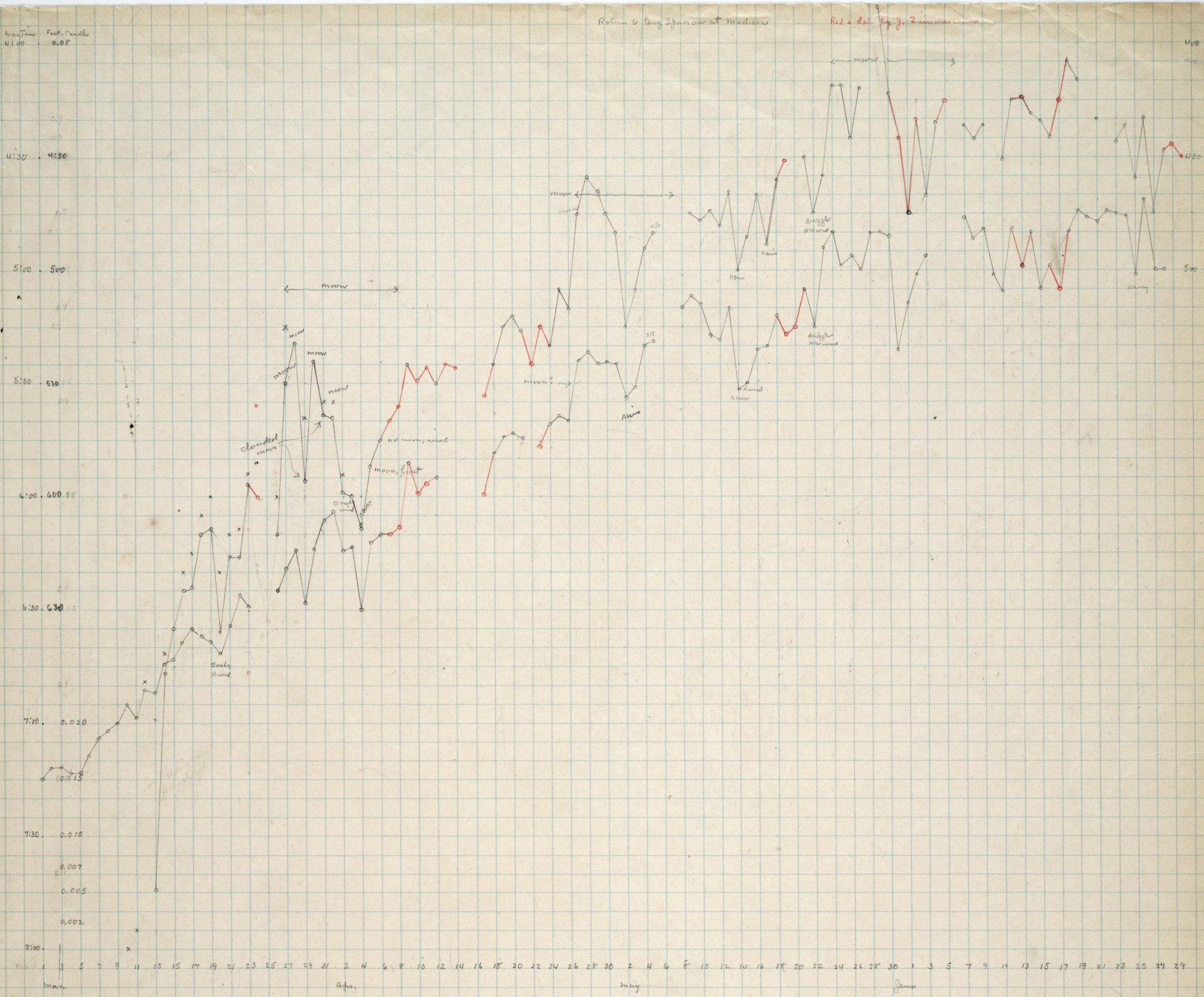
UUGS

	CST
Oct 1	525
15	
31	
Nov 15	
30	
Dec 15	
30	
Jan 1	
15	
Feb 1	

Figure 2

17

Robin & Song Sparrow at Madison — Red = dpl. by J. Zimmerman



3/27 Robin jumped 30 minutes in call and 40 minutes in song, evidently due to full moon. When song began at 5:30, after 15 min. of chirping, it was by snatches with only about a third of the audible birds (perhaps 10 in all) participating. By 6:00 all were singing and light was 0.012 — same as yesterday. No other species sang early, but crows were on the move at first as been evils, as usual. Perhaps they started even earlier. Query: does a point of light, like a moon, have more effect than light uniformly alone? I would judge yes.

3/29 moon, but clouded over, also colder. Robin almost exactly in line with pre-moon acceleration.

3/30 moon, clear, but colder. Robin not quite so early as 3/28.

4/5 ½ moon, clear, frosty, but robins ½ hr later than frostless clear days. Depressed by frost?

4/27 Robin jumped 26 min. ap. assume 15 minutes due to full moon. nearly freezing. When robin song began only 1 or 2 birds singing in snatches. Others gradually came in. Light was −0.012, i.e. diff. in light intensity could not be detected by light meter.

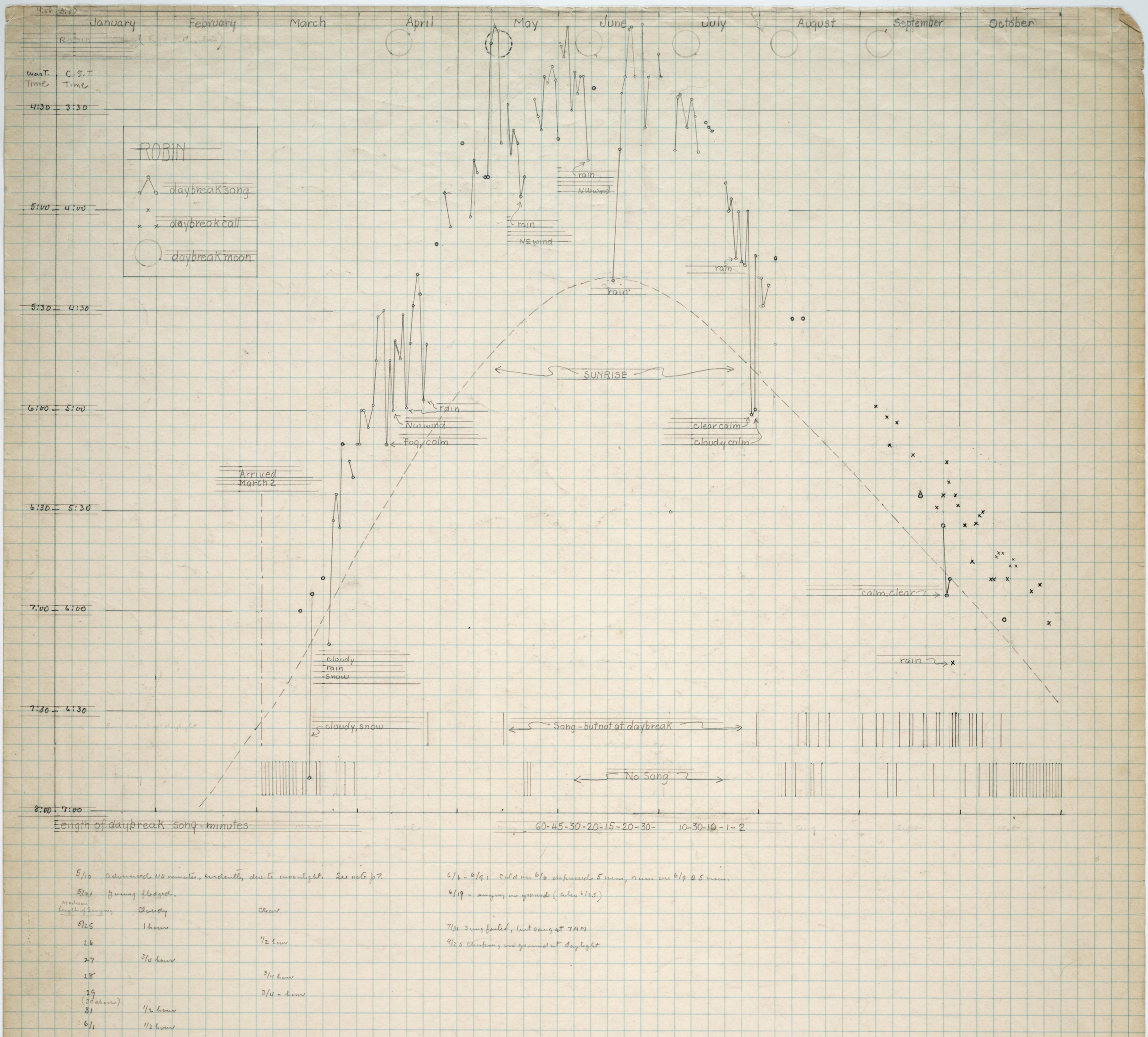
4/29 Robin showed moon effect (4:39 AM) and was all "arrayed" by 7 A.M. moon hazy.

5/11 while most species tend to sing at daybreak at a light threshold which advances with the sun, and which usually gives the same reading for consecutive days, the departures from this tendency are sufficiently striking to force the conclusion that light alone does not determine song. Thus robin after April 7 (up to July 11) tended to sing at 0.012, but once delayed to 0.2 (windy) twice to 0.03 (raining or windy), once to 0.02 (windy), and 4 times to 0.015 (in good weather). Extremes robin sang seven times at less than 0.012, which was the lowest register of my meter.

5/11 Counted 6 pr. on Wind Hall, 7 pairs 5/12, 8 pairs 5/15.

Year? — not 1944

(18)



5/10 Advanced 40 minutes, evidently, due to moonlight. See note p?

5/21 Young fledgeds.

	Madison Length of Singing	Cloudy	Clear
5/25		1 hour	
26			1/2 hour
27		3/4 hour	
28			3/4 hour
29 (30 absent)			3/4 - hour
31		1/2 hours	
6/1		1/2 hours	
2			1/2 hour
3			1/2 hour
(4) absent			
5		1/2 hour	
6		20 min.	
7		20 min	
8		1/2 hr	
9		15 min (again)	
11		20 min	
18		15 min	
19		20 min	
20			20 min.
21			1/2 hr
22		1/2 hr	
23			1/2 hr
24			20 min
26		1/2 hr	
30			20 min
7/8		10 min	
7/10			30 min
7/11		10 min	

6/6 - 6/9: Cold on 6/6 depressed 5 mm, 0 mm on 6/9 0.5 mm.

6/19 - singing on ground (also 6/23)

7/31 Song failed, (but sang at 7 AM)

9/25 Chattering, not yet grounded at daylight

7/21 Drops away from 8 fount - not over 3 syllables - a wild stormy day: why such slow depression?

7/24 Some semblance of song. Last young fledged. Inaudible heard [illegible] sang on roosting muscle. Mm - territorial? Use over a shorter subsong nearly absent July 10.

7/26 Very weak, short, only 1-2 bursts.

7/27 Very weak

7/28-29 Only birds, 2 minutes, very weak, and dearly late

Figure 2 (b)

(cuckoo) Black-billed Cuckoo
White-throated
Ring-necked Pheasant

Jan | Feb | Mar | Apl | May | June | July | Aug | Sept | Oct | Nov | Dec

Duration of Song in 1944

LEGEND ~

- song period, details not known
- full song (daily at daybreak)
- turnup, fade-out,
- silent period between arrival and first song
- daily autumn song
- aver. departure date [mostly after Schorger, 18]
- x - - - x - x sporadic autumn song

Prothonotary Warbler
Bobolink
Woodcock
Balt. Oriole
Brown Thrasher
Yellow-billed
B.B. Cuckoo
R.B. Grosbeak
Cat Bird
Yellow-thr. Vireo
Yellow Warbler
Scarlet Tanager
Wood Thrush
Bobwhite
Indigo Bunting
Chipping Sparrow
Short-billed marsh Wren
Wood Pewee
Towhee
Henslow Sparrow
Houses Wren
Whip-poor-will
Warbling Vireo
Northern Yellowthroat
Crested Flycatcher
E. Meadowlark
Field Sparrow
Bluebird
Red-winged Blackbird
mourning dove
song sparrow
robin
R.N. Pheasant
Cardinal
Nighthawk
Ruffed grouse

	Duration (days)	Station	
1	51	A	
4	48	AB	
3	52	A	
1	53	AB	47 +44
5	64	AB	96 +32
6	68	A	
7	76	AB	
8	86	AB	115 +29
14	93	A	
12	92	AB	
10	90	AB	
13	92	AB	99
19	101	A	
22	103	A	96
24	105	AB	114
15	97	AB	X
17	100	A	
20	102	AB	99
26	112	AB	
25	106	AB	112
11	91	A	
21	102	A	
23	103	AB	87 +14
16	99	A	
28	139	AB	
27	137	A	126
30	159	A	
29	149	AB	
31	161	AB	175 +14
32	163	AB	167
33	165	B	147 - 18
35	245	AB	
34	225	AB	181 - 44
18	100	AB	
9	86	A	

ended flight

Length of Day, hours: 10.0 | 11.2 | 12.6 | 14.0 | 15.0 | 15.2 | 14.5 | 13.2 | 11.7 | 10.4 | 9.3

TOWHEE

Freq

Freq

Northern hist - Song Sparrow

Fig 8 - Cuckoo

Blue Jay (Cuckoo)

Wan T. C.S.T.

4:30 – 3:30

5:00 – 4:00

5:30 – 4:30

6:00 – 5:00

6:30 – 5:30

7:00 – 6:00

7:30 – 6:30

8:00

cuckoo, but not at daylight

apr may June July aug

5/30 – 6/2 entirely silent at daylight.

6/6 – 6/9: cuckoo 6/6 decreased 20 mins; same on 6/9 20 mins.

8/15 getting warm at daylight

English Sparrow

Wan T. CST

4:30 – 3:30

5:00 – 4:00

5:30 – 4:30

6:00 – 5:00

6:30 – 5:30

7:00 – 6:00

7:30 – 6:30

sept

oct

apr may June July aug sept oct nov

raining

rain

.545

.600

.615

.630

.645

.710

6/6 – 6/9: cuckoo on 6/6 decreased 5 minutes, same on 6/9 20 mins.

7/29 – west Anglia sparrows woke up 2 minutes earlier than fmr birds in my eaves. Effect of crowding?

7/30 – " " " " " 10 " " " " " " " "

8/15 – no longer hear terminal chirps. no evening chirp at all.

Brown Thrasher (Leith)

WarT. C.S.T.

4:30 — 3:30

5:00 — 4:00

5:30 — 4:30

6:00 — 5:00

6:30 — 5:30

arr 4/20

7:00 — 6:00

7:30 — 6:30

8:00 — 7:00

? intermittent

? intermittent

Apr. May June July Aug

4:00 3:00

April May June July Aug

War Time C.S.T. (Central Standard Time)

WarT. C.S.T.

4:30 — 3:30

5:00 — 4:00

cold

Arrived May 2

rain N.W. wind

cloudy windy

5:30 — 4:30

SUNRISE

rain

Silent 4 days

6:00 — 5:00

arr 5/2

CATBIRD

6:30 — 5:30

Also daytime Song 9-10-44

No Song

7:00 — 6:00

7:30 — 6:30

Song but not at daylight

arrived 5/2 No song

Fig 13b.

Apr May June July Aug

Catbird

7/25. Daytime song first failed. Evening song first failed 7/18. No daytime song or eve. song 7/25

2e

April | May | June | July | August

Wea. | Temp. | Fine

Time | Fine

Wea T. | C.S.T.

4:00 3:00
4:30 3:30
5:00 4:00
5:30 4:30
6:00 5:00
6:30 5:30
7:00 6:00
7:30 6:30
8:00

Arrived and sang May 2

May 2

rain
NW wind

cloudy
windy

rain

clear, calm

rain
NE wind

HOUSE WREN

Song - but not at daybreak

No Song

Song, but not at daylight

Cuckoo

Song, but not at daylight

apr | may | June | July | Aug | Apr | May | June | July | Aug

6/6 - 6/9: Cuckoo on 6/6 decreased 10 min, on on 6/9 15 min.

(2X)

Field Sparrow (Chestnut)

356

Mourning Dove. F-23

War T.	C.S.T.	War Time	C.S. Time	February	March	April	May	June	July	August	September
4:30	3:30	4:30	3:30								
5:00	4:00	5:00	4:00								
5:30	4:30	5:30	4:30								
6:00	5:00	6:00	5:00								
6:30	5:30	6:30	5:30								
7:00	6:00	7:00	6:00								
7:30	6:30	7:30	6:30								
8:00	7:00	8:00	7:00								

MOURNING DOVE

daybreak song

rain

rain

cloudy, E. wind

SUNRISE

rainy

rain

clear

calm

cloudy

cloudy

rain

calm

Arrived and sang - Mar. 25

rain

N.E. wind

jumped 40 minutes

F-23

song - but not at daybreak

No Song

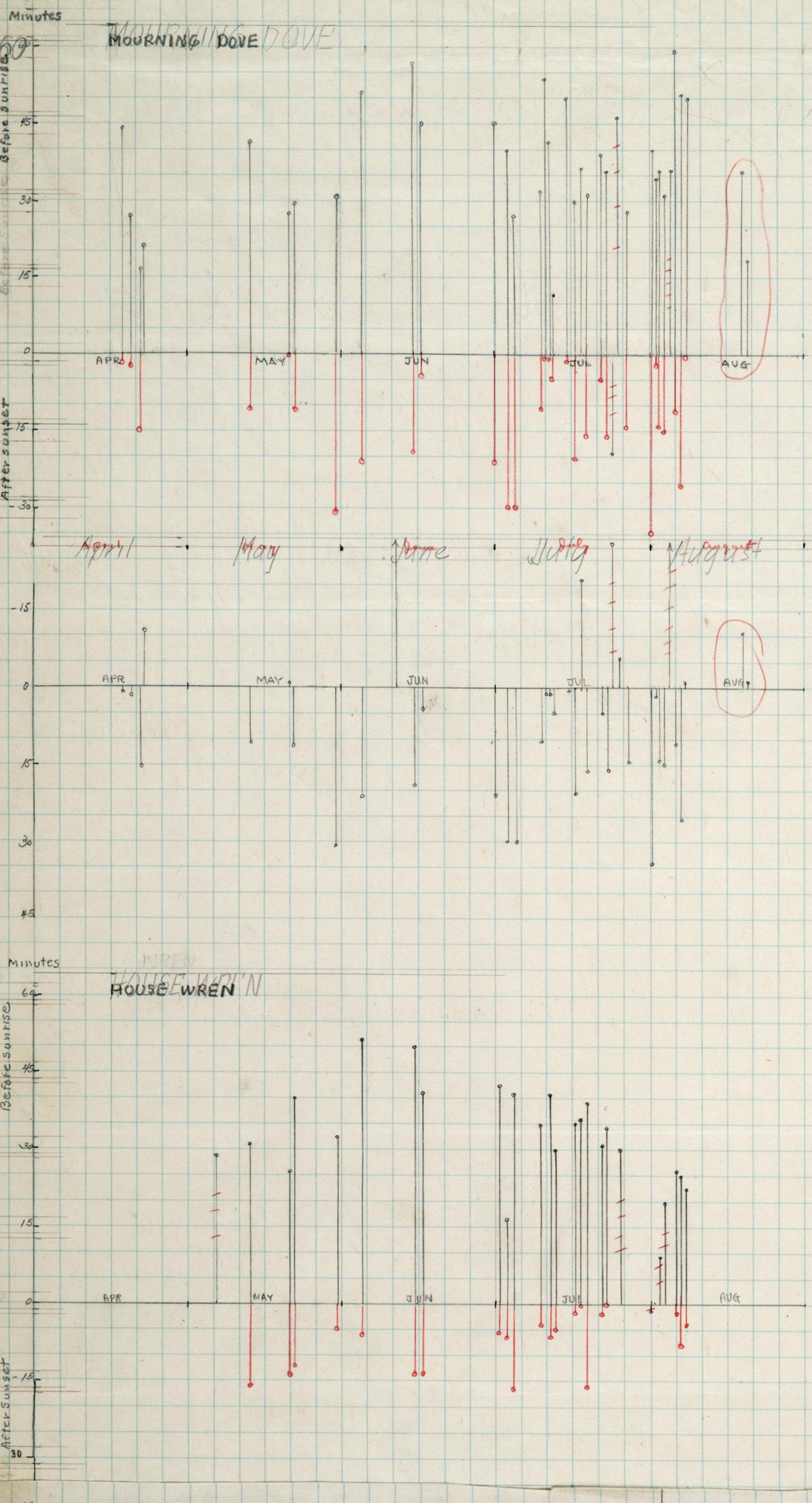
6/2 Song getting weaker - not many sung very

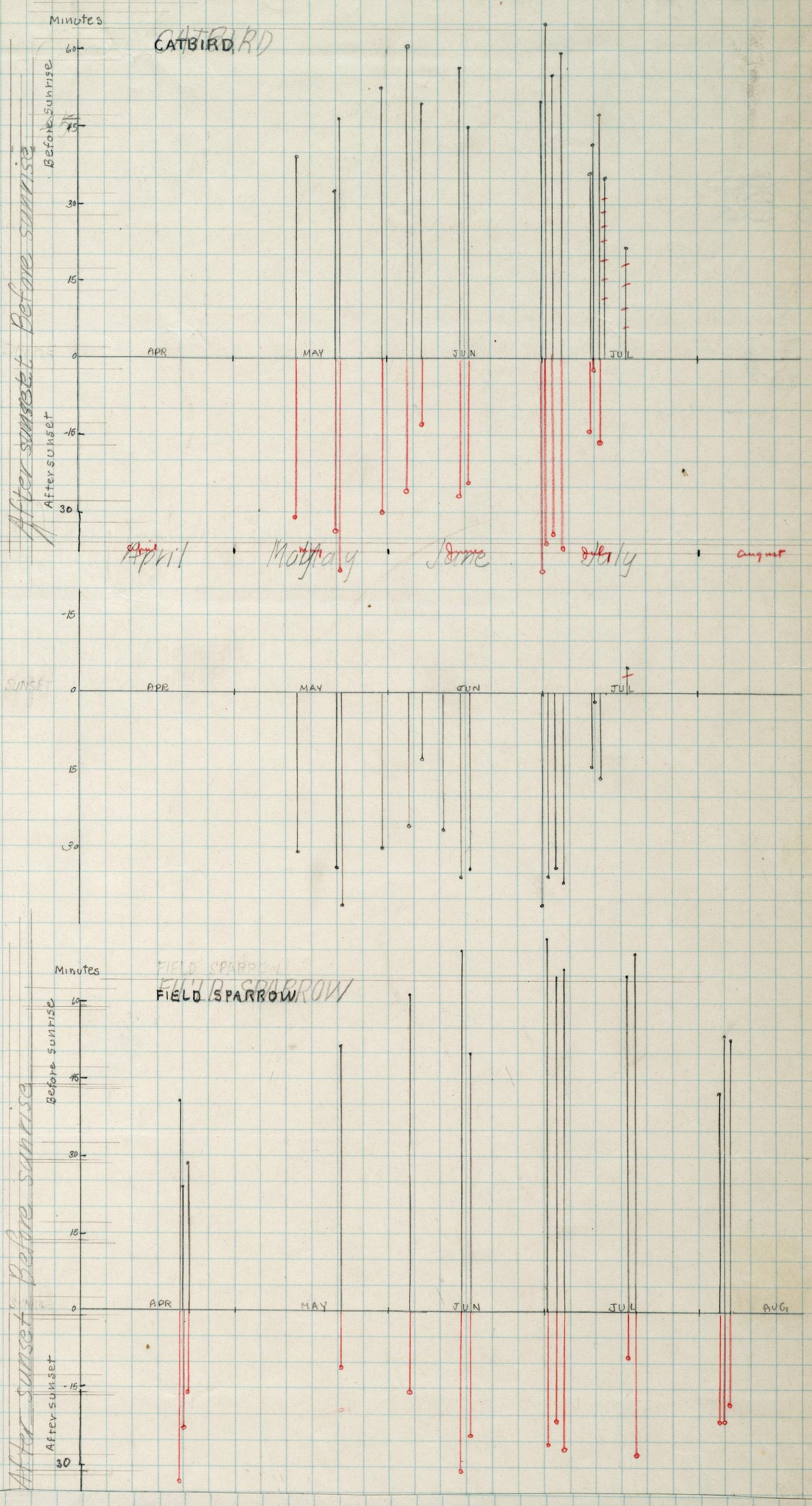
6/6 silent on cold windy morning. Resumed 6/7

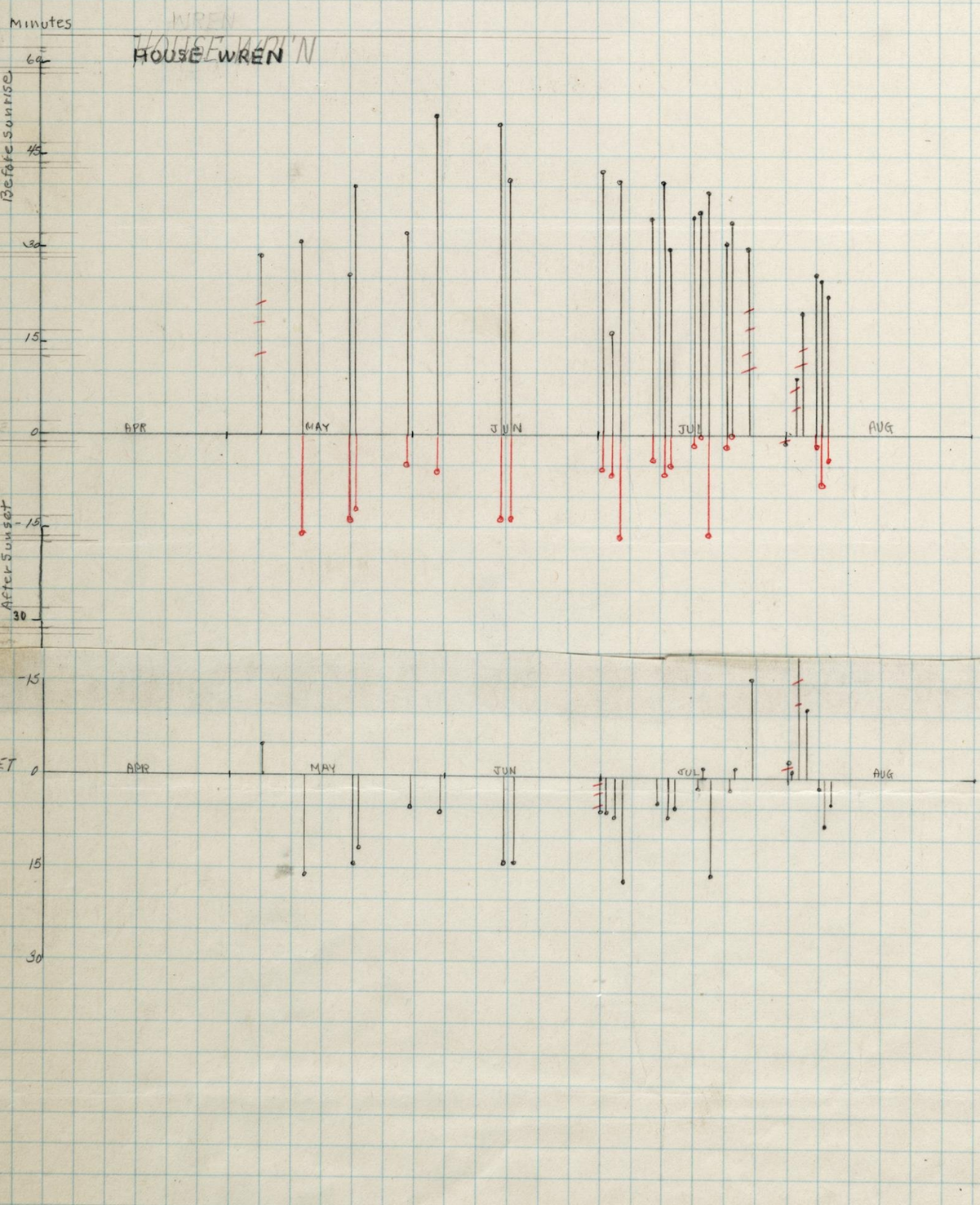
7/24 descending robin curve crosses down curve

7/26 Evening song faded. 7/27 morning song late and weak

25


MOURNING DOVE
Minutes
Before Sunrise
After sunset
60
45
30
15
0
15
30
SUNSET
APR
MAY
JUN
JUL
AUG


CATBIRD
Minutes
Before Sunrise
After sunset
60
45
30
15
0
15
30
SUNSET
APR
MAY
JUN
JUL


HOUSE WREN
Minutes
Before sunrise
After sunset
60
45
30
15
0
15
30
SUNSET
APR
MAY
JUN
JUL
AUG

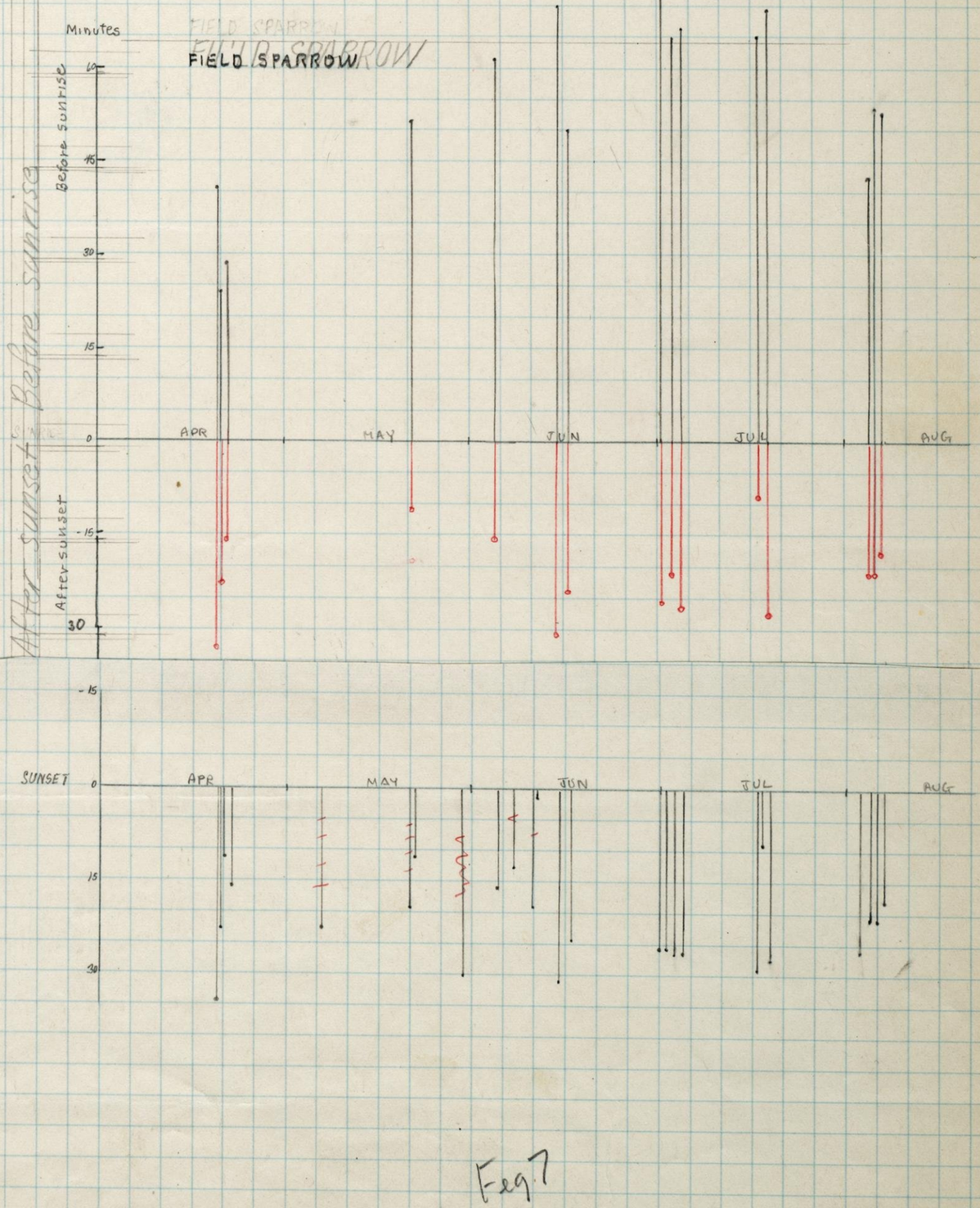

FIELD SPARROW
Minutes
Before sunrise
After sunset
60
45
30
15
0
15
30
SUNSET
APR
MAY
JUN
JUL
AUG

Fig 7

Sunrise

War Time | C.S. Time

4:30 – 3:30

5:00 – 4:00

5:30 – 4:30

6:00 – 5:00

6:30 – 5:30

7:00 – 6:00

7:30 – 6:30

8:00 – 7:00

8:30 – 7:30

9:00 – 8:00

9:30 – 8:30

April | May | June | July | August | September

Sunset

War Time | C.S. Time

6:00 – 5:00

6:30 – 5:30

7:00 – 6:00

7:30 – 6:30

8:00 – 7:00

8:30 – 7:30

9:00 – 8:00

9:30 – 8:30

Cut

Sunset

War Time | C.S. Time

7:30 – 6:30

8:00 – 7:00

8:30 – 7:30

9:00 – 8:00

9:30 – 8:30

Cut

April | May | June | July | August | Sept | Oct

SUNRISE

SUNSET

WOODCOCK 1938-1944

o o Last peent at daybreak, first at evening

+ + Last flight at daybreak, first at evening

late peent see p. 214

late peent see p. 174

Figure 8

Figure 9.

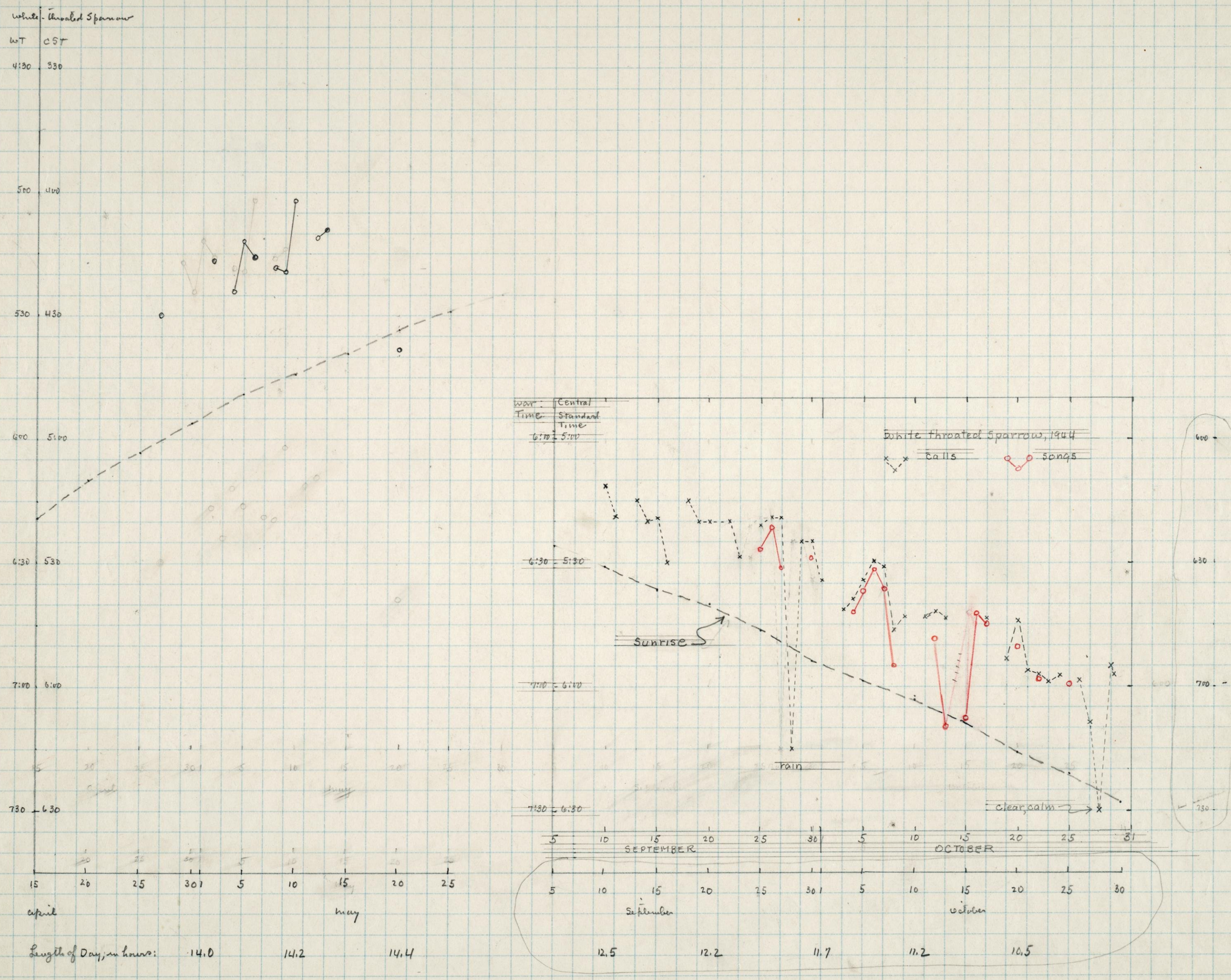


Figure 9

Bluejay

Present data — Oct 20 - Nov 20

Needed data — Feb 20 - Mar 20

1. What readings Feb ~~20~~ - Mar 31? (with light)

Compute average Feb _____

" March _____

2. Compute " Oct _____

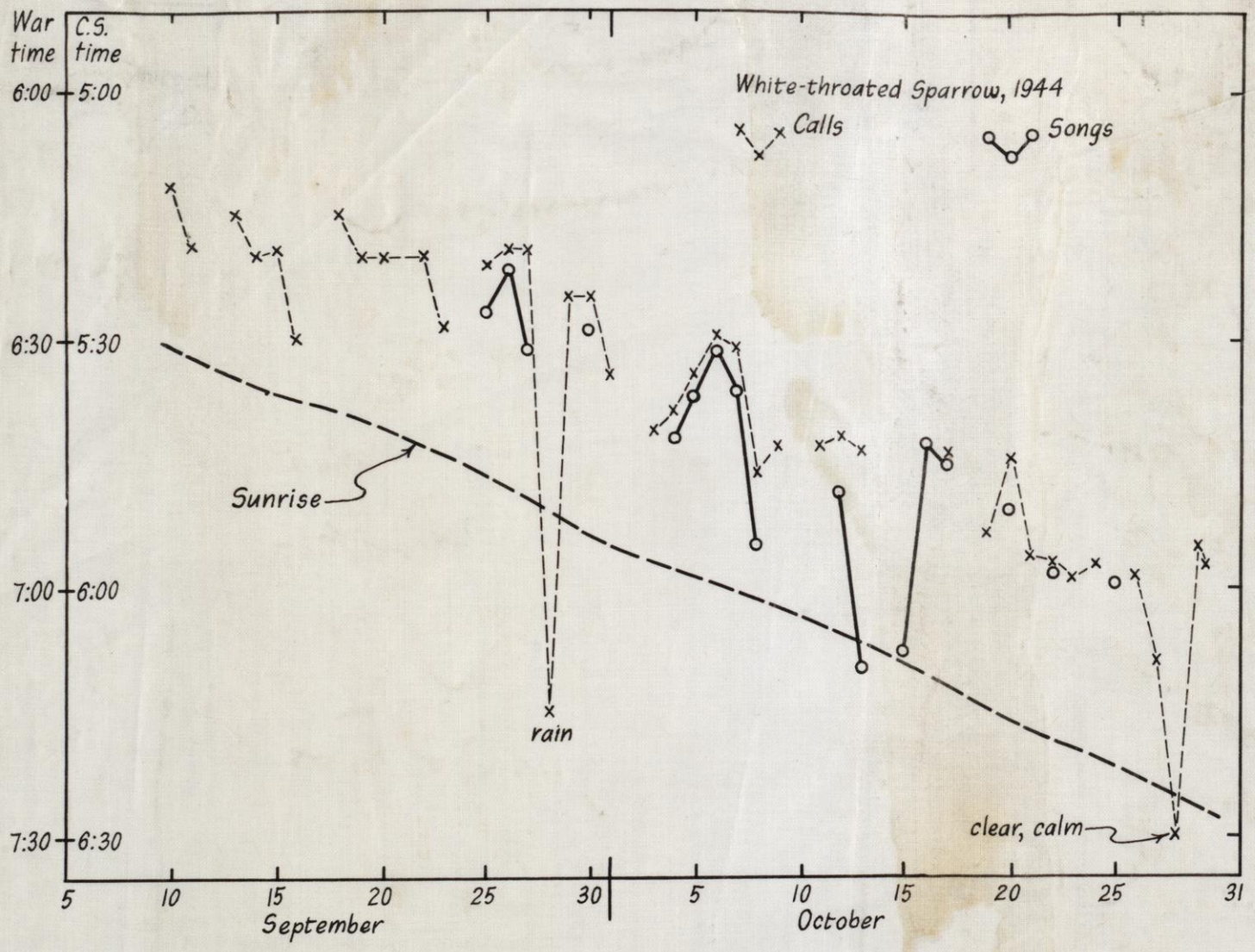
" " Nov _____

Wisconsin Conservation Department
Madison, Wisconsin

Form A-43



PREPARED BY
WISCONSIN CROP
REPORTING SERVICE


War time
C.S. time
6:00
5:00
6:30
5:30
7:00
6:00
7:30
6:30
White-throated Sparrow, 1944
Calls
Songs
Sunrise
rain
clear, calm
5
10
15
20
25
30
September
5
10
15
20
25
31
October

Civil Twilight

6:00 - 5:00

6:30 - 5:30

C.S Time

6:00

Feb | March | April | May | June | July | Aug | Sept | Oct

WAR TIME — CENTRAL STANDARD TIME

4:30 — 3:30

4:30 — 3:30

5:00 — 4:00

5:30 — 4:30

6:00 — 5:00

6:30 — 5:30

7:00 — 6:00

7:30 — 6:30

Catbird
Robin
Cardinal
Dove
Wren

catbird
robin
cardinal
dove
wren

English Sparrow call

English Sparrow call

SUNRISE

SUNRISE

CIVIL TWILIGHT

CIVIL TWILIGHT

(Curve of equal light intensity)

(Curve of equal light intensity)

catbird
wren
cardinal
dove
English sparrow call

Catbird
Wren
Cardinal
Dove
English Sparrow

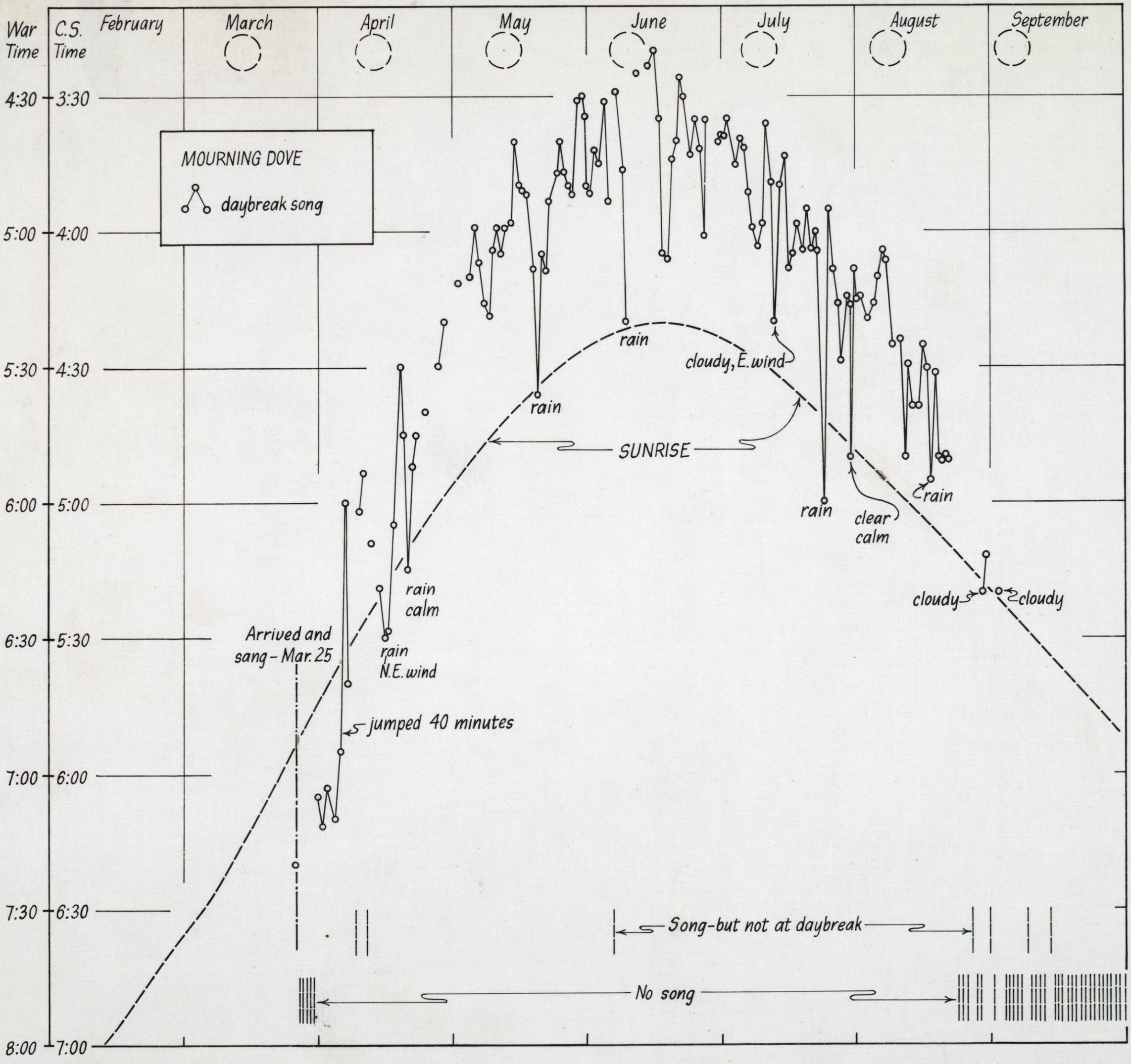
dove
cardinal
robin

Cardinal
Robin

Fog 5

Feb. | March | April | May | June | July | Aug | Sept. | Oct

Reduce to 4 1/4"


War Time
C.S. Time
February
March
April
May
June
July
August
September
4:30 – 3:30
5:00 – 4:00
5:30 – 4:30
6:00 – 5:00
6:30 – 5:30
7:00 – 6:00
7:30 – 6:30
8:00 – 7:00
MOURNING DOVE
daybreak song
rain
cloudy, E. wind
rain
SUNRISE
rain
clear calm
rain
cloudy
cloudy
rain calm
Arrived and sang – Mar. 25
rain N.E. wind
jumped 40 minutes
Song-but not at daybreak
No song

April May June July August Sept.

Sunrise
War time | C.S. time

4:30 — 3:30
5:00 — 4:00
5:30 — 4:30
6:00 — 5:00
6:30 — 5:30

CIVIL TWILIGHT BEGINS

SUNRISE

WOODCOCK 1938 - 1944
o o Last peent at daybreak, first at evening.
+ + Last flight at daybreak, first at evening.

Sunset
War time | C.S. time

7:30 — 6:30
8:00 — 7:30
8:30 — 7:30
9:00 — 8:00

6:40
6:50
7:10
7:20
7:40
7:50
8:10

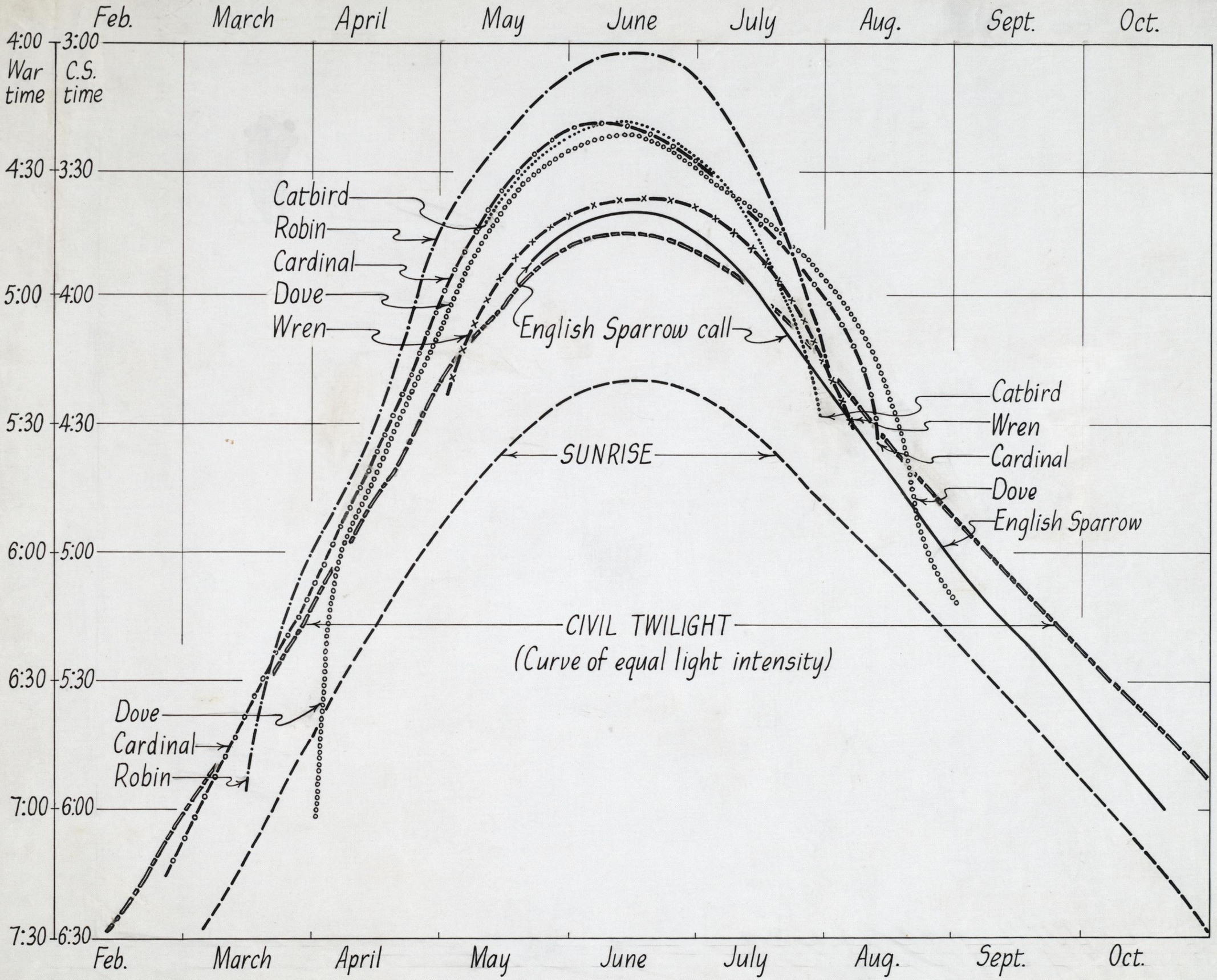
fog

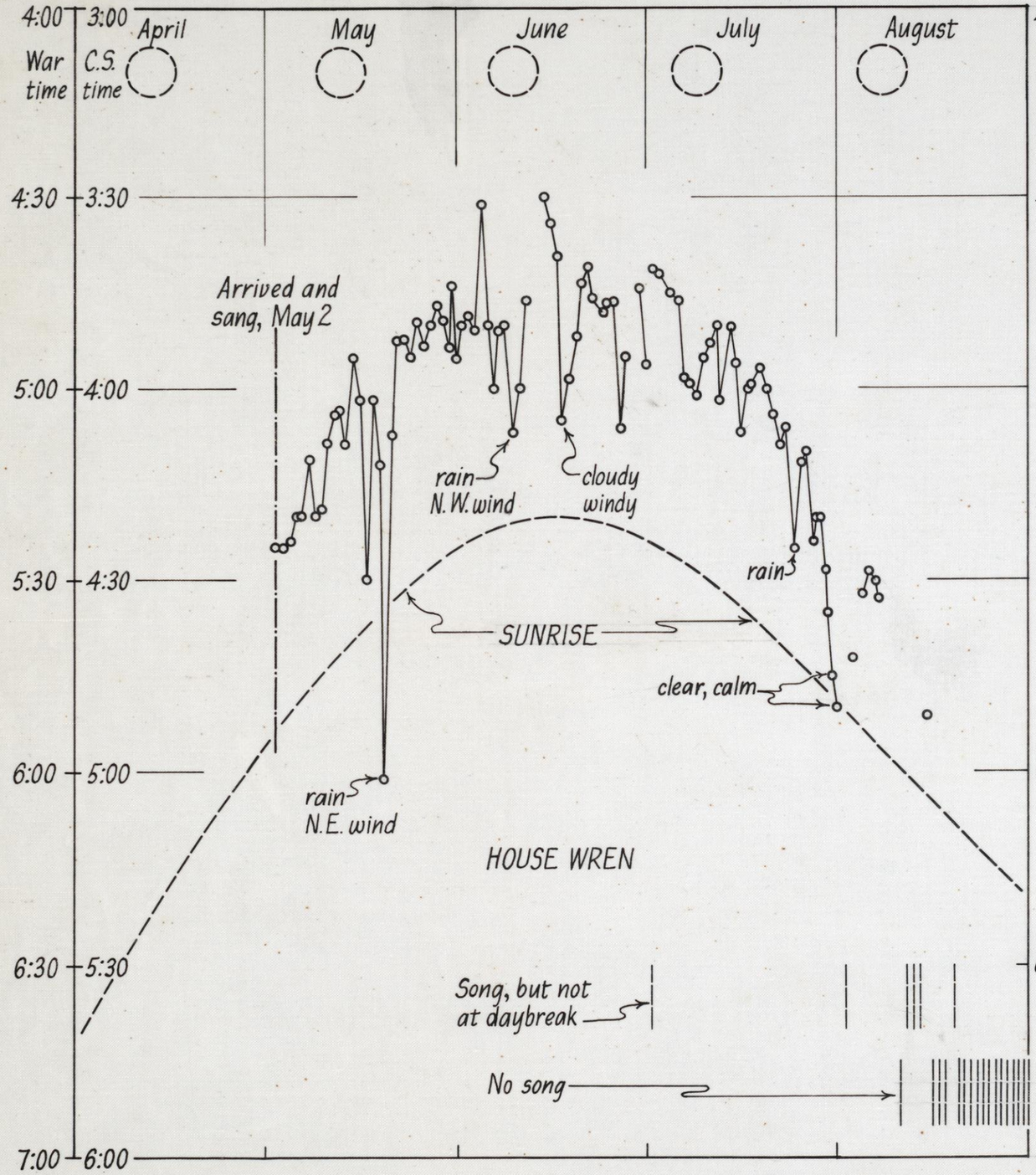
SUNSET

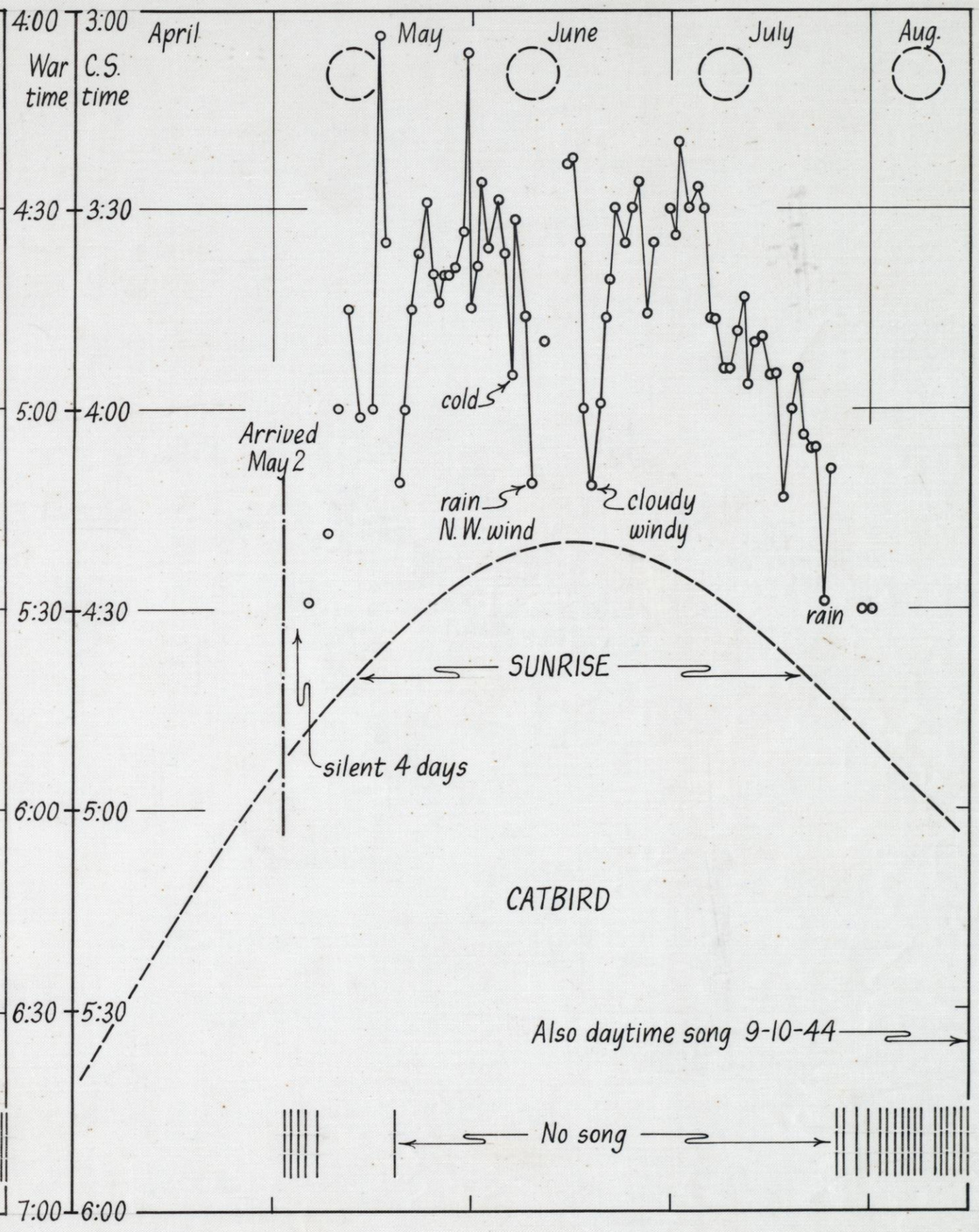
CIVIL TWILIGHT ENDS

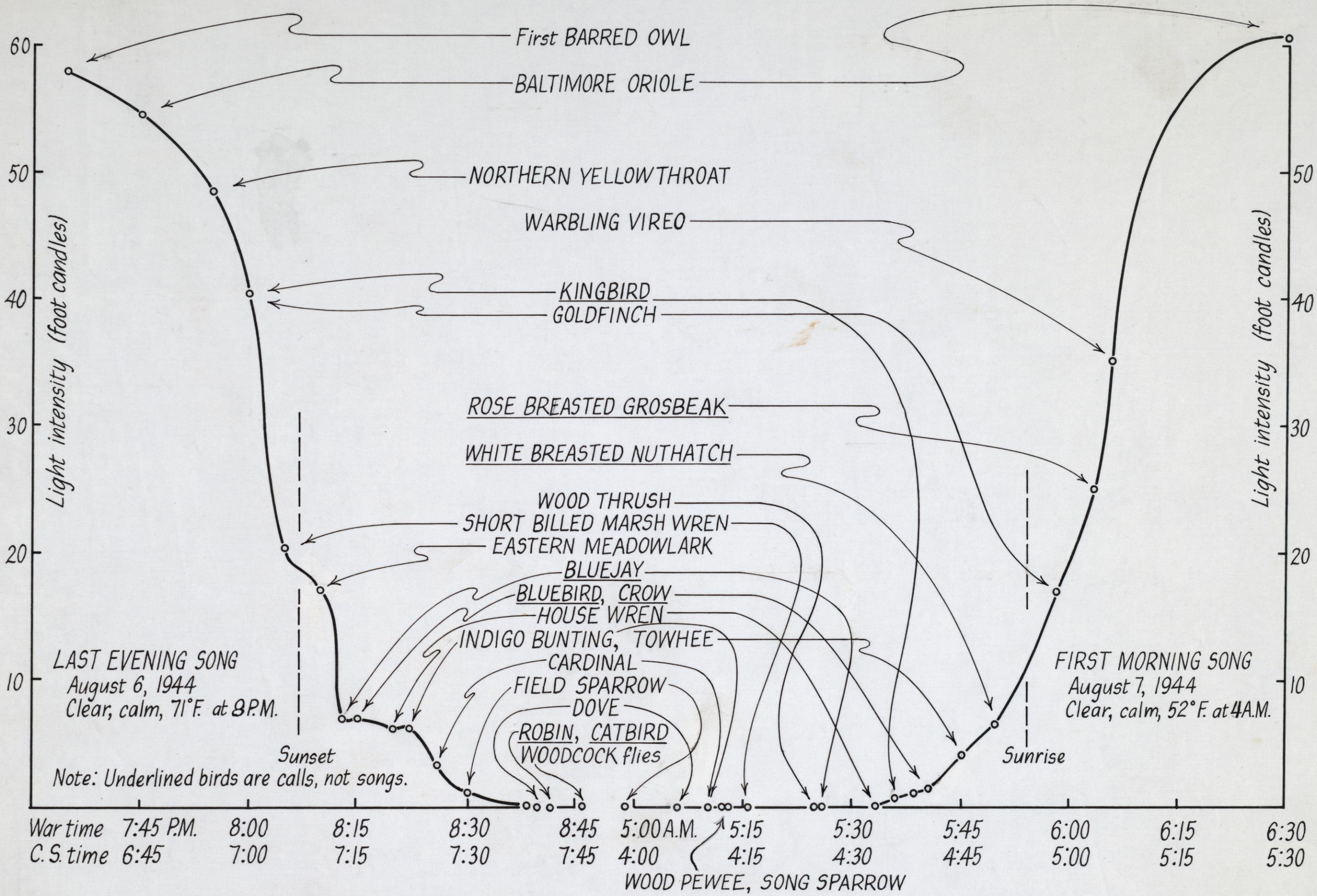
April May June July August Sept.

1944 Records = ∅


Feb.
March
April
May
June
July
Aug.
Sept.
Oct.
4:00 War time
3:00 C.S. time
4:30
3:30
5:00
4:00
5:30
4:30
6:00
5:00
6:30
5:30
7:00
6:00
7:30
6:30
Catbird
Robin
Cardinal
Dove
Wren
English Sparrow call
SUNRISE
CIVIL TWILIGHT
(Curve of equal light intensity)
Catbird
Wren
Cardinal
Dove
English Sparrow
Dove
Cardinal
Robin


4:00
War time
3:00
C.S. time
April
May
June
July
August
4:30
3:30
5:00
4:00
5:30
4:30
6:00
5:00
6:30
5:30
7:00
6:00
Arrived and sang, May 2
rain
N.W. wind
cloudy
windy
rain
SUNRISE
clear, calm
rain
N.E. wind
HOUSE WREN
Song, but not at daybreak
No song


4:00
War time
3:00
C.S. time
April
May
June
July
Aug.
4:30
3:30
5:00
4:00
5:30
4:30
6:00
5:00
6:30
5:30
7:00
6:00
Arrived May 2
cold
rain
N.W. wind
cloudy
windy
rain
SUNRISE
silent 4 days
CATBIRD
Also daytime song 9-10-44
No song


First BARRED OWL
BALTIMORE ORIOLE
NORTHERN YELLOWTHROAT
WARBLING VIREO
KINGBIRD
GOLDFINCH
ROSE BREASTED GROSBEAK
WHITE BREASTED NUTHATCH
WOOD THRUSH
SHORT BILLED MARSH WREN
EASTERN MEADOWLARK
BLUEJAY
BLUEBIRD, CROW
HOUSE WREN
INDIGO BUNTING, TOWHEE
CARDINAL
FIELD SPARROW
DOVE
ROBIN, CATBIRD
WOODCOCK flies
WOOD PEWEE, SONG SPARROW
Light intensity (foot candles)
60
50
40
30
20
10
LAST EVENING SONG
August 6, 1944
Clear, calm, 71°F. at 8P.M.
Sunset
FIRST MORNING SONG
August 7, 1944
Clear, calm, 52° F. at 4A.M.
Sunrise
Note: Underlined birds are calls, not songs.
War time 7:45 P.M. 8:00 8:15 8:30 8:45 5:00 A.M. 5:15 5:30 5:45 6:00 6:15 6:30
C.S. time 6:45 7:00 7:15 7:30 7:45 4:00 4:15 4:30 4:45 5:00 5:15 5:30

January February March April May June July August September October

War time / C.S. time

4:00 – 3:00

4:30 – 3:30

CARDINAL

5:00 – 4:00

5:30 – 4:30

6:00 – 5:00

6:30 – 5:30

7:00 – 6:00

7:30 – 6:30

8:00 7:00

Astronomical Twilight

Civil Twilight

Sunrise

(5) 118 166

War Time | C.S. Time

January | February | March | April | May | June | July | August | September | October

4:00 | 3:00
4:30 | 3:30
5:00 | 4:00
5:30 | 4:30
6:00 | 5:00
6:30 | 5:30
7:00 | 6:00
7:30 | 6:30
8:00 | 7:00

ROBIN
- daybreak song
- daybreak call
- daybreak moon

rain
N.E. wind

rain
N.W. wind

rain

rain

SUNRISE

rain
N.W. wind
fog, calm

clear, calm
cloudy, calm

Arrived March 2

cloudy
rain
snow

cloudy, snow

calm, clear

rain

Song-but not at daybreak

No song

Length of daybreak song-minutes

60-45-30-20-15-20-30- 10-30-10-1-2

✓ – daybreak failures (1 error 5/20 corrected to 5/7) = total of 8

Moon prevents = 8 days
114 daybreak songs

Days calculated at 10 mm/38 mm = 26% = 8 days (full moon to last quarter