

8.1 hrs

Location Honolulu to (20-34 N 158-05 W)
 Observer Crossin et al Date 24 January 1966 Time 1015 to 1828
 Weather Partly cloudy throughout day, decreasing to solid cloudiness in late afternoon, becoming quite choppy

SPECIES	Abundance				Feeding			Remarks
	0-10	10-20	20-1000	1000+	Wings	Flies	Yields	
Laysan Albatross								
Black-footed Albatross	2							Feeding birds
Wedge-tailed Shearwater								
Christmas I. Shearwater								
Audubon's Shearwater								
Bonin I. Petrel								
Phoenix I. Petrel								
Burker's Petrel								
Sooty Petrel								
Red-tailed Tropicbird								
White-tailed Tropicbird								
Masked Booby								
Brown Booby		21						
Red-footed Booby		23						
Green Frigatebird								
Golden Plover								
Kuday Turnstone								
Kingbird Tattler								
Sanderling								
Brittle-thighed Curlew								
Sooty Tern		27						
Gray-backed Tern								
Brown-winged Tern								
Common Noddy								
Hawaiian Noddy								
Black-leg Kittiwake								
Fairy Tern								

Total Birds = 158
 Sightings = 33
 Total Flows = 10 (120)
 Feeding Flies = 1 (2)
 Total species = 6
 Shear Pet = 1
 Albatross = 2
 Tern = 27
 Boobies = 44
 Jaeger = 23
 Plover = 6

18 Puffins

Less Frigatebird 1
 Parasitic Jaeger 20 // 4 collected. max of 11 at any one time

Bird sp. 3
 Jaeger sp. 3
 Bird sp. 6

Flock Data

1030 5 Pomarine Jaeger sitting on the

1045 12 RFB 5 Feeding
BB 7

1230 12 RFB 6
BB 6 sitting on the

1245 23 RFB 7 traveling & sitting
BB 8
PT 8

1615 5 Pomarine Jaeger Trav

1650 10 " " "

1713 31 ST 26
PT 5 Trav.

1735 11 PT Trav

1750 11 PT Trav

1800 7 PT Trav

Flock Data

0955 #1 ST 40 Feeding
RFB 1

1553 108 SIT 100 Feeding
FT 6
TJSP 2

2 (149)

3rd day SIC II

(11.6 hrs.)

Location 15-08N; 161-52W — 15-28N, 163-00W

Observer Crossin et al. Date 2/20/1999 Time 0617 to 1750

Weather scattered squalls, partly cloudy, sea mist - 500ft up to 2 ft

SPECIES	Abundance				Breeding			Remarks
	1-10	10-100	100-1000	1000+	Incub	Eggs	Young	
Laysan Albatross								
Black-footed Albatross								
Wedge-tailed Shearwater	1							light phase
Christmas I. Shearwater	1							
Audubon's Shearwater								
Bonin I. Petrel								
Phoenix I. Petrel								
Bulwer's Petrel								
Sooty Petrel								
Red-tailed Tropicbird	2							ad's
White-tailed Tropicbird	10							
Masked Booby								
Brown Booby	1							ad.
Red-footed Booby	9							2 ad, 2 imm
Great Frigatebird	4							
Golden Plover								
Ruddy Turnstone								
Wandering Tattler								
Sanderling								
Bristle-thighed Curlew								
Sooty Tern								
Gray Backed Tern								
Brown-winged Tern								
Common Noddy								
Hawaiian Noddy								
Blue-gray Noddy								
Fairy Tern	2							
Shear = pet.	3							
Storm Petrel sp.	2							one w. white wing, almost adult.
Booby sp.	1							
Bird	2							

Total Birds = 91
 Sighting = 39
 Flocks = 3 = (4.8)
 Feeding flocks = 0
 Species = 10

Shear Pet = 5
 Tern = 55
 Tropicbird = 12
 Booby = 11
 Storm Pet = 2
 Frigatebird = 4
 other = 2

1 whale

Flock Data

1110	32	ST	30	
		IS	1	Traveling
1215	8	GF	1	
		ST		Traveling
1403	8	ST		Traveling

1213 hrs

Location 13-28N, 163-00W — 11-36N, 164-12W
Observer Cassin et al. Date 26-27 Jan 66 Time 1750 to 0606
Weather Mainly clear rain forward movement

S. ECIES	Abundance				Including			Remarks
	1-10	10-100	100-1000	1000 +	Nests	Eggs	Young	
Laysan Albatross								
Black-footed Albatross								
Wedge-tailed Shearwater								
Christmas I. Shearwater								
Audubon's Shearwater								
Bonin I. Petrel								
Phoenix I. Petrel								
Bulwer's Petrel								
Sooty Petrel								
Red-tailed Tropicbird								
White-tailed Tropicbird								
Masked Booby								
Brown Booby								
Red-footed Booby								
Great Frigatebird								
Golden Plover								
Ruddy Turnstone								
Wandering Tattler								
Sanderling								
Bristle-thighed Curlew								
Sooty Tern								
Grey backed Tern								
Brown-winged Tern								
Common Noddy								
Hawaiian Noddy								
Blue-gray Noddy								
Fairy Tern								
Shearwater Pet sp.								
Procellariid sp.								
Booby sp.								
Noddy Tern sp.								
Tad								
Grey Backed Tern?								

Total Birds = 149
Species = 5?
Flocks = 3 (25) ST.

NO

Location 11-26 N; 164-12 W — 10-08 N; 165-20 W
 Observer Crossin et al. Date 27 January 1966 Time 0622 to 1806
 Weather Partly cloudy, wind mod ca 12 knots, swells up to 8 ft, whitecaps, sunset over hills

SPECIES	Abundance				Breeding			Remarks
	1-10	11-100	100-1000	1000 +	Nests	Eggs	Young	
Laysan Albatross								
Black-footed Albatross								
Wedge-tailed Shearwater	5							* light phase, 1 dark phase
Christmas I. Shearwater								
Audubon's Shearwater								
Bonin I. Petrel								
Phoenix I. Petrel								Total Birds = 134
Bulwer's Petrel								Sightings = 64
Sooty Petrel								Flocks = 3 (67)
Red-tailed Tropicbird	1							Feeding flocks = 1 (36)
White-tailed Tropicbird								Total Species = 12
Masked Booby	2							1 ad, 1 subad.
Brown Booby	1							Shear - Pet = 64
Red-footed Booby								Tern = 59
Great Frigatebird	2							Tropicbird = 1
Golden Plover								Booby = 4
Ruddy Turnstone								Frigatebird = 2
Wandering Tattler								Storm Petrel = 4
Sanderling								
Bristle-thighed Curlew								
Sooty Tern		56						
Gray-backed Tern								
Brown-winged Tern								
Common Noddy								1 whale
Hawaiian Noddy								
Blue gray Noddy								
Fairy Tern	3							
Dark-rumped Petrel	2							
(Intermediate Petrel)	22							
(Pomarine Skuas)	2							
Narrow-winged Petrel	10							* light phase, 1 not recorded
Phaethon rubricauda	2							
Shearwater	50							4 (all white wings) (2)
Booby sp	1							
Pterodroma sp	5							
Shear-pet	16							

Flock Data

0522	20	ST	20	
		ET	1	T-F
		sheep Pit	5	
1216	36	ST	30	
		Sheep Pit	6	FF
1350	5	ST		T-F

Location 10-08 N; 165-20W — 11-13 N; 167-14 W.
 Observer Crossin et al. Date 27-28 Jan 66 Time 1806 to 0634
 Weather 55

watches mainly from flying bridge or bridge

SPECIES	Abundance				Breeding			Remarks
	1-10	20-100	100-1000	1000 +	Nests	Eggs	Young	
Laysan Albatross								
Black-footed Albatross								
Wedge-tailed Shearwater								
Christmas I. Shearwater								
Audubon's Shearwater								Total Birds = 17
Bonin I. Petrel								Tropic birds = 1
Phoenix I. Petrel								Terns = 11 ?
Sulwer's Petrel								Shear Pet = 1
Sooty Petrel								Shore bird = 1
Red-tailed Tropicbird								
White-tailed Tropicbird								sightings = 15
Masked Booby								
Brown Booby								
Red-footed Booby								
Great Frigatebird								
Golden Plover								
Ruddy Turnstone								
Wandering Tattler								
Sanderling								
Bristle-thighed Curlew								
Sooty Tern	8							
Gray-backed Tern								
Brown-winged Tern								
Common Noddy								
Hawaiian Noddy								
Blue-gray Noddy								
Fairy Tern								
<u>Kermadec Petrel</u>	1							
<u>Tropicbird sp</u>	1							
<u>Tern or tropicbird</u>	3							
<u>Bird</u>	2							
<u>Shear Pet</u>	1							
<u>Shorebird</u>	1							

5th day

11.7 hrs.

Location 11-13N, 167-18W — 12-01N; 168-15W
 Observer Crossin Date 25 January 1966 Time 0634 to 1814
 Weather Mostly cloudy, wind up to 40 mph in gusts, fair squalls.

SPECIES	Abundance				Breeding			Remarks
	1-10	10-100	100-1000	1000+	Nests	Eggs	Young	
Laysan Albatross								
Black-footed Albatross								
Wedge-tailed Shearwater								Total Birds = 57
Christmas I. Shearwater								Sightings = 32
Audubon's Shearwater								Total (Wrens = 2 (20)
Bonin I. Petrel								Feeding flocks = 2 (20)
Phoenix I. Petrel								Total species = 10
Bulwer's Petrel								
Sooty Petrel								Shear Pet = 39
Red-tailed Tropicbird								Tern = 8
White-tailed Tropicbird	2							Tropic bird = 2
Masked Booby	2			1 imm				Booby = 3
Brown Booby								Frigate bird = 3
Red-footed Booby	1							Storm Petrel = 2
Great Frigatebird	3			2 subad. or imm. attempting to feed w/				not other birds about
Golden Plover								
Ruddy Turnstone								
Wandering Tattler								
Sanderling								
Bristle-thighed Curlew								
Sooty Tern	8							
Gray-backed Tern								
Brown-winged Tern								
Common Noddy								
Hawaiian Noddy								
Blue-gray Noddy								
Fairy Tern								

Kermadec Petrel 8 2 birds slight, 2 unmarked.
 Swan-Fernandez Pet 20
 White-necked Petrel 9 1st of these seen flying together
 Phoenix Petrel 1
 Dark-rumped Petrel 1

Shear Petrel sp. 2 with white-rumped -
 Pterodroma sp. 5

Flock Data

1315

6

ST

Feeding

1704

14

ST 2

JFP 7

WNP 2

KP 3

Feeding

2 (20)

Apr 28-29 Jan 66

Location 12-01 N, 168-15 W — 12-23 N, 170-08 W
 Observer Crossin et al Date 28-29 Jan 66 Time 1814 to 0644
 Weather mainly clear, scattered clouds, wind
up to 25 knots, sea rough

atches held on bow most of night

SPECIES	Abundance				Breeding			Remarks
	1-10	10-100	100-1000	1000+	Nests	Eggs	Young	
Laysan Albatross								
Black-footed Albatross								
Wedge-tailed Shearwater								
Christmas I. Shearwater								
Audubon's Shearwater								
Bonin I. Petrel								
Phoenix I. Petrel								
Bulwer's Petrel								
Sooty Petrel								
Red-tailed Tropicbird	1							
White-tailed Tropicbird								
Masked Booby								
Brown Booby								
Red-footed Booby	1							
Great Frigatebird								
Golden Plover								
Ruddy Turnstone								
Wandering Tattler								
Sanderling								
Bristle-thighed Curlew								
Sooty Tern		60						
Gray-backed Tern								
Brown-winged Tern								
Common Noddy								
Hawaiian Noddy								
Blue-gray Noddy								
Fairy Tern								
<u>Fernandez Petrel</u>								
<u>Juan Fernandez Pt</u>								

Total Birds = 64
 Sightings = 46
 Flocks = 0
 Species = 5
 Shear Pet = 2
 Tern = 100
 Tropicbird = 1
 Booby = 1

1 Subad.

Location 12-23 N; 170-08 W — 13-24 N; 171-31 W

Observer Cooper et al Date 27 Jan 66 Time 0644 to 1928

Weather Partly cloudy, frequent rain squalls, wind up to 30 kts

SPECIES	Abundance				Breeding			Remarks
	1-10	10-100	100-1000	1000+	Nests	Eggs	Young	
Laysan Albatross								
Black-footed Albatross								
Wedge-tailed Shearwater								
Christmas I. Shearwater								Total Birds 27
Audubon's Shearwater								25
Bonin I. Petrel								Flocks 0
Phoenix I. Petrel								Species 8
Bulwer's Petrel								
Sooty Petrel								Shear Pet 6
Red-tailed Tropicbird	3							Tern 1
White-tailed Tropicbird								Tropicbird 3
Masked Booby	3	(2 subadults)						Frigatebird 5
Brown Booby								Booby 8
Red-footed Booby	4	(1 subadult)						Shear 1
Great Frigatebird	1	- Ad +						
Golden Plover								
Sooty Tern								
Gray-backed Tern								
Brown-naped Tern								
Common Noddy								
Hairy-tailed Noddy								
Sooty Noddy								
Fairy Tern	1							
Black Noddy	2							
White-tailed Tropicbird	1							
Phoenix I. Petrel	1							
Red-footed Booby	1							
Shearwater	1							
Frigatebird	1							
Booby	1							
Shearwater	2							(Birds seen in area)
Booby	1							

Location 13-24 N, 171-31 W 14-48 N, 172-24 W
 Observer Crossin et al Date 29-30 Jan. 66 Time 1528 to 0659
 Weather Partly cloudy, few rain squalls, wind ca 25 knots.

SPECIES	Abundance				Breeding			Remarks
	1-10	10-100	100-1000	1000+	Nests	Eggs	Young	
Laysan Albatross								
Black-footed Albatross								
Wedge-tailed Shearwater								Total birds 34
Christmas I. Shearwater								Sightings 2.5
Audubon's Shearwater								Flocks 0
Bonin I. Petrel								Species 4
Phoenix I. Petrel								
Bulwer's Petrel								
Sooty Petrel								Shear Pet 1
Red-tailed Tropicbird								Tern 30
White-tailed Tropicbird								Dove 3
Masked Booby								
Brown Booby	1							
Red-footed Booby	1							
Great Frigatebird								
Golden Plover								
Ruddy Turnstone								
Wandering Tattler								
Sanderling								
Bristle-thighed Curlew								
Sooty Tern		30						
Gray-backed Tern								
Brown-winged Tern								
Common Noddy								
Hawaiian Noddy								
Blue-gray Noddy								
Fairy Tern								
Shear Pet	1							
Dove	1							

penney 10-11

Location 14-40 N; 172-24 W — 15-49 N; 171-03 W

Observer Crossin et al. Date 30 January 1968 Time 0659 to 1821

Weather mostly clear, scattered clouds mainly on horizon
sea choppy, swells up to 2 ft., wind on SW

SPECIES	Abundance				Breeding			Remarks
	1-10	10-100	100-1000	1000 +	Nests	Eggs	Young	
Laysan Albatross								
Black-footed Albatross								
Wedge-tailed Shearwater								
Christmas I. Shearwater								
Audubon's Shearwater								
Bonin I. Petrel								
Phoenix I. Petrel								
Bulwer's Petrel								
Sooty Petrel								
Red-tailed Tropicbird	1			ad.				
White-tailed Tropicbird	2							
Masked Booby	3			2 imm, 1 ad.				
Brown Booby								
Red-footed Booby	9							
Great Frigatebird								
Golden Plover								
Ruddy Turnstone								
Wandering Tattler								
Sanderling								
Bristle-thighed Curlew								
Sooty Tern								
Gray-backed Tern								
Brown-winged Tern								
Common Noddy								
Hawaiian Noddy								
Blue-gray Noddy								
Fairy Tern								

Total Birds = 19
Sightings = 15
Flocks = 0
Species = 5
Shear Pet = 4
Tropicbird = 3
Booby = 12

{ Two Brown Booby Pet. 1 }
{ White-necked Pet. 2 }

Phalarope 1

015-101-1001

Location _____

Observer Cassin et al.

Date 30-31 Jan 66 Time 1821 to 0600

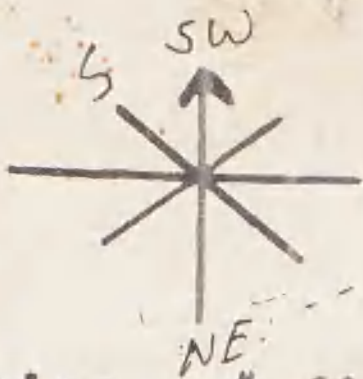
Weather _____

SPECIES	Abundance				Breeding			Remarks
	1-10	10-100	100-1000	1000	Nests	Eggs	Young	
Laysan Albatross								
Black-footed Albatross								
Wedge-tailed Shearwater								
Christmas I. Shearwater								
Audubon's Shearwater								Total Birds 138
Bonin I. Petrel								Flocks 4 (all small)
Phoenix I. Petrel								Sightings 48
Bulwer's Petrel								Total Species 4
Sooty Petrel								
Red-tailed Tropicbird								Birds 2
White-tailed Tropicbird								Terns 2
Masked Booby	1							
Brown Booby								
Red-footed Booby	5							(3 immatures 2 collected 1 ad)
Great Frigatebird								
Golden Plover								
Ruddy Turnstone								
Wandering Tattler								
Sanderling								
Bristle-thighed Curlew								
Sooty Tern			130					
Gray-backed Tern								
Brown-winged Tern								
Common Noddy								
Hawaiian Noddy								
Blue-gray Noddy								
Fairy Tern	1							
Booby sp.	1							

SI-MNH-953e
7-28-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

1st day - S/C 11



Moon Position: 21-00N; 158-04W

DATE 24 Jan 66
Pg. # 1

time	species	#	dir.	hgt.	remarks	loc.
1015					Begin observations	Leave Honolulu
1016	Booby sp?	1				
1018	Birds	3				
1020	Porpoise				Porpoise - 18	
1020	Brown Booby	1			Feeding over school of porpoise	
1023	" "	1			Flying with B.B. (1020)	
1025	Jaeger sp.	3			2 sitting on water	
TF 1030	Pomarine Jaeger	5			sitting on H ₂ O	
1035					ship now circling	
FF 1045	R.F. Booby	8			FF, fish jumping	
	Brown Booby	4				
1050					ship still circling	
1105	Brown Booby	1			on log	
1107	Brown Booby	2			feeding	
1125	Booby sp!	2				
1208					jaegers and boobies scattered,	
1230					alternately feeding, flying, sitting	
					6 Brown and 6 Red-footed Boobies sitting on H ₂ O, ship still stationary	
1235	leave harbour					
1400	Pomarine Jaeger	1	NE		8 Brown, 6 Red-foot, several Pomarine Jaeger (light phase, rest dark-intermediate) sitting in group, Red-foots spread out, Browns in loose group but staying together jaegers sitting together, several other jaegers scattered about, flying and sitting	
1505	Black-foot Albatross	1	following ship			
1505	Pomarine Jaeger	1	"	landed on H ₂ O		
1507	"	2	landed on H ₂ O			
1530	"	2	all light phase			
			NE	light phase		
					Total count: 6 adult Red-foot - sitting 1 imm. " " "	
					8 adult Brown -	
					1 lt. phase Pom. Jaeger	
					7+1 dark or intermed. phase Pom. Jaeger	
1600	Pomarine Jaeger	1	S	light phase		
1605	Black-foot Albatross	2			following ships (undoubtedly one from 1505)	
1615	R.F. Booby	1	○			
1615	Pomarine Jaeger	5	SW		dark phase, & light phase - strung out, not in a flock	
1615	R-F Booby	1	○			
1628	Pomarine Jaeger	1	on H ₂ O			
1650					Total of 10 Pomarine Jaeger (2 coll-RSC)	
1707	Sooty T.	1	NE		adult	

SI-MNH-958e
7-28-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

SIC 11



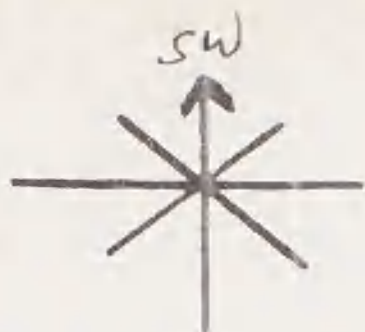
NOON Position: 21-00N, 158-04W

DATE 24 Jan 1966
Pg. # 2

	time	species	#	dir.	hgt.	remarks	loc.
	1710	Bird	3	N			
TF	1713	Sooty Tern	26	E		Travelling	
		Pom. Jaeg.	35				
	1715	Black-foot albatross	2	⊙		same	
2CC	1735	Pom. Jaeger	2			2 coll. Thompson & Smith	when a bird is shot down all others swirl around above it.
		" "	11			few dark phase, rest light	
TF	1750	" "	11	SE		landed on H ₂ O, ^{then} circling ship.	
TF	1810	" "	7			imm. tried to land on ship	
	1814	Red-foot Booby	1	⊙		same ones as above following ship	
	1822	Pom. Jaeger				still same ones following ship	
	1822	Bl-foot Albatross	2				
	1823					sunset - cease observations.	

100 75

SI-MNH-958e
7-28-64



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

2nd day SIC 11

DATE 25 January 1966
Pg. # 1

NOON Position: 17-53 N ; 160-02 W

time	species	#	dir.	hgt.	remarks	loc.
0600					Begin Observations	
0603	Bl-foot Albatross	1			Following ship - molt in upper wing coverts	
0609	Red-foot Booby	1	S-SW		ad.	
0613	SUNRISE					
0622	R F Booby	1	SW		immature	
0626	Bird	1			ad's	
0630	Sooty tern	2	S			
0703	Bl-foot Albatross	1			same ad's.	
0703	sooty tern	2	N-NW		light phase	
0710	wedge-tail	1	S-SW			
0730	sooty tern	2	W		ad's	
0732	Sooty Tern	1	NW		ad	
0733	"	4	NW		ad	
0741	"	1	NW		ad	
0742	"	3	NW		ad.	
0747	"	2	NE		Ad.	
0755	Bird	3				
0758	Sooty Tern	1	NW		ad	
0800	"	1	NW		Ad	
0803	BK-ft. Albatross	1			same	
"	Sooty Tern	4	NW		Ad.	
0810	" "	1	NW		ad	
0811	" "	1	NW		ad	
0812	" "	1	NW		ad	
0813	Bird	2	NW			
0814	sooty tern	4	NW		ad	
0815	Laysan Albat.	1			Following ship.	
0823	sooty tern	1	NW		ad	
0828	" "	3	NW		ad.	
0827	" "	1	NW		ad.	
0838	" "	1	SE		ad	
0850						Rain squall to S.E.
0900	sooty tern	1	NW		ad	
0901	WTTB	1			circling ship	
0903	Bk-ft. Albatross	1			same	
"	Sooty Tern	2	NW		Ad.	
0910	" "	2	NW			
0917	Leach's type	1	W		white rump, black	
0918	Laysan albat	1			same as 0815	
0920						ship entering squall (see 0850.)
0940	RF Booby	1				
FF 0955	sooty tern	40			Following ship; imm; molt in secondaries.	
	RF Booby	1			adult, F/LOCK (not actively feeding)	
1002	RF Booby	2			↑ joined by imm of 0940	
1003	sooty tern	2	NW		imm following ship.	

SI-MNH-958e
7-28-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

DATE 25 Jan 66
Pg. # 2



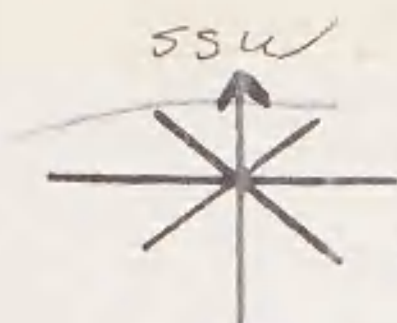
Noon Position: 17-53 N ; 160-02 W

time	species	#	dir.	hgt.	remarks	loc.
1011	R. F. Booby	1	NE		imm	
1017	Sooty Tern	1	N			
1021	hays in All	1	⊙		Probably the same one.	
1035	Sooty Tern	1	SE			
1042	Sooty Tern	2	↖↗N		Ad	
1045	Sooty Tern	3	↖↗		Ad	
1145	" "	2	"		Ad	
1305	WTTB	1	⊙			
1343	Sooty Terns	2	SW		Ad	
1355	Red sp B. Faced Albat	1	SSW		same	
1402	Shear-Petrel	2	⊙			
1456	Sooty tern	1	N		rump not seen	
1505	Storm Petrel	1	⊙			
1529	Sooty Tern	1	NE			
1548	W-T tropic bird	1	N			
FF 1553	Sooty Tern	100+	}		all in one flock	
FF 1554	Fairy tern	6				
1554	Tropic bird sp.	2				
1550	whale				whale - 1 blow only	
1555	Black-ft. Albatross	1			same	
1615	Fairy tern	1	S		dove in H ₂ O once, then continued on course	
1625	R-f. Booby	1	N		Immature or Subadult	
1700	BFA/booby sp	1			SAME	
1703	R-f. Booby	1	⊙		Adult white	
1710	" "	1	⊙		" "	
1736					SUNSET - green flash!	

SI-MNH-958e
7-28-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

SIC 11
3rd Day



NOON Position: 14-17N; 162-24W

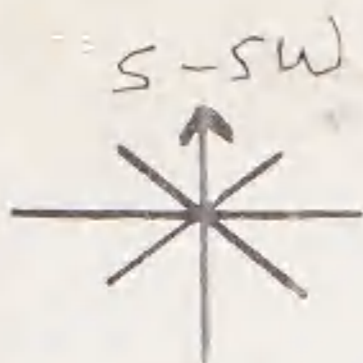
DATE 26 Jan 1966
Pg. # 1

	time	species	#	dir.	hgt.	remarks	loc.
	0600					Begin observation	
	0601	Blue-face Boob	1	NW		adult	
	0613	Sooty Tern	2	NW		adults	
	0617					SUNRISE	
	0617	Red-tail tropicb.	1			adult; hovered over ship, then flew NE	
	0647	Fairy Tern	1	SE			
	0656	Sooty Terns	2	NW		adults	
	0721	R.F. Booby	1			immature following ship	
	0725	Leach's type SP.	1	W		All black w/ white rump	
	0730	WTTB	2	⊙			
	0820	WTTB	1	⊙			
	0910	Sooty Tern	2	NW			
	0930	R-F Booby	2	⊙		feeding, adult	
	0930	Brown Booby	1	⊙		" "	
	0930	Sooty Tern	1	⊙		circling Boobies	
	0950	R-F Booby	1	N		Adult traveling	
TF	1102	shear-petrel	1	NE			
	1110	Sooty Terns	30	NE		} one flock	
		Gr. Frigatebird	1	NE			
	1113	X-mas Is Shear	1	NE			
	1137	WTTB	1	⊙			
	1147	G. Frigate	1	⊙			
	1205	Wh.t. Tropicbird	1	⊙			
	1215	"	2	NE		Adult	
TF	"	Sooty Tern	8	SE			
	1305	R.F. Booby	1	N		Adult	
	1314	Wh.t. Tropicbird	1	SE		Adult	
	1339	wedge-tail Shear.	1	NW		light phase	
TF	1403	Sooty Terns	6			scattered, were not observed feeding.	
	1405					Rain squall to south.	
	1417	R.F. Booby	1	SW		adult	
	1425	shear/petrel	1	NW			
	1425					Rain squall to N. (different from above)	
	1435	Bird	1			on horizon - mostly or all white.	
	1438	WTTB	1			adult.	
	1440	Sooty Tern	1				
1442	1442	R.F. Booby	1	W		adult.	
14	449	R.F. Booby	1	W		imm.	
	1453	Booby sp	1			ad	
	1515	Red-foot Booby	1	SW			
	1520	WTTB	1	⊙		ad.	
	1532	Bird	1				
	1553	Sooty Tern	2				
		G. Frigate	1			Ad ♂	
	1606	G. Frigatebird	1	NE		Ad ♂	
	1714	Leach's type SP	1	SE		adult	
	1728	WTTB	1	⊙			
	1735	WTTB				whale 007007	
	1745	Shear-Pet	1	⊙			
	1750					SUNSET cease diurnal obs.	

Midnight Position: 16-05 N; 161-13 W

SI-MNH-958e

7-28-64



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

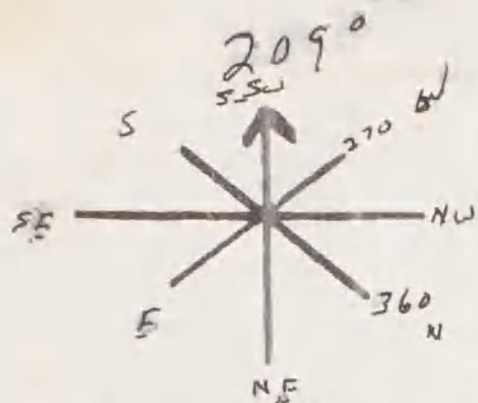
DATE 26²⁷ January 1966
Pg. # 15

Nocturnal Obs.

time	species	#	dir.	hgt.	remarks	loc.
1750					Sunset - Begin Obs.	
2035	sooty tern	2+	W		only heard, apparently quite high.	
2040	"	1	W		heard, quite high	
2050	"	1	⊙			
2055	"	1	N-NE		came low over ship. ad.	
2112	"	1	⊙			
2118	"	2	NW			
2123	"	2	W			
2132	"	2+			heard in the East, sounded to be travelling NW	
2136	"	3	NW			
2142	"	2	⊙			
2145	"	4+	⊙		at least 3 streaks off N-NE	
2149	Tropicbird sp	1	SW		heard one call to E.	
2152	Grey backed tern?	1				
2156	Sooty Tern	2	N			
2200	"	3+			heard calling off to west.	
2204	"	5+			circling ship, 2+ headed NW	
2209	"	1	⊙			
2210	"	1	N			
2214	"	1	SE			
2216	"	1	⊙			
2219	Tropicbird	1	⊙			
2220	Sooty Tern	2	W			
2224	"	3			calling off to W, sound like they were going NE	
2228	"	1	NE			
2232	"	2	⊙			
2240	"	1	SW			
2242	"	2			calling off to SW, heading N	
2245	"	1	W			
2250	"	1	NE			
2253	"	1	⊙			
2258	"	2	SW			
2307	"	1	E			
2311	"	1	NW			
2317	"	1	E			
2345	"	1	NE			
0009	"	2	NE		calling and flying low 25' over hold	
0015	Storm Petrel	1	⊙		around lights	
0018	Sooty Tern	2	W		flying high above ship - calling	
0022	"	1	?	40'		
0026	"	2	W		40' - faint flight & calling	
0029	"	1	⊙		came into ship called once - circling	

SI-MNH-958e

7-28-64

209°
208°

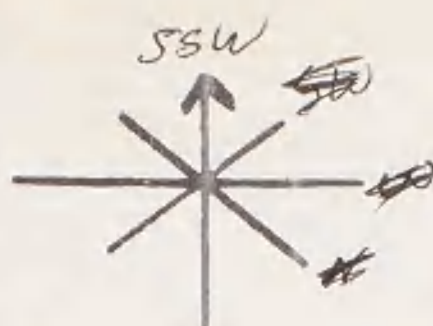
Midnight Position: 16-05 N; 161-13 W

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- EDATE 26-27 January 1964
Pg. # 2

time species # dir. hgt. remarks loc.

time	species	#	dir.	hgt.	remarks	loc.
0036	Sooty tern	1	?		called over - Not reported.	
0045	" "	1	NE			
0050	" "	1	E			
0053	" "	1	E			
0056	" "	1	⊙			
0100	" "	1	?			
0110	" "	2	?			
0120	" "	1	NW			
0125	" "	1	?			
0135	" "	1	⊙		Circling ship & calling	
0142	" "	1	NE			
0155	" "	2	?			
0202	" "	1	?			
0208	" "	1	?			
0210	" "	1	⊙			
0225	" "	2	NW			
0233	Noody sp	2	N			
0235	Sooty tern	1	N			
0250	" "	10+	N		may have been up to 15 birds. Some imm. birds.	
0300	" "	1	NE			
0303	" "	2	?		1 imm.	
0307	" "	2 1	?			
0315	" "	2	N			
0328	" "	1	⊙			
0330	" "	2	⊙			
0332	" "	1	N			
0336	" "	3	N			
0342	" "	1	⊙			
0344	Bird	1	N		may have been shear-pet	
0346	Sooty Tern	1	⊙		calling	
0352	" "	1	?			
0352	Storm Pet	1			small, dark, fluttery	
0355	Sooty Tern	1	⊙		silent, is raining	
0358	" "	2	NE		calling	
0404	" "	1	⊙		circled ship, silent, raining	
0410	" "	1	⊙		hard	
0412	" "	4+	⊙		rain has stopped	
0415	" "	3	⊙		calling	
0416	" "	2	NE		silent	
0432	" "	1	NE		calling	
0450	" "	2	⊙		seen & heard	
0511	" "	2	NE		" "	
0526	" "	2	⊙			
0530	Rain Squeak	2				
0606	Booby sp.	1	NE		cease noise	

SI-MNH-958e
7-28-64



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E
Noon Position: 10-42N; 164-39W

STE 11
4th Day

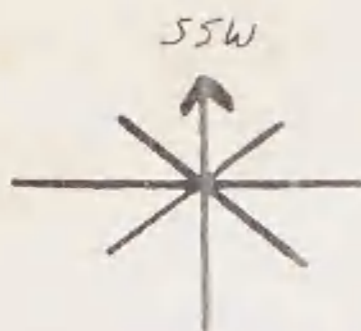
DATE 27 Jan 1966
Pg. # 1

time	species	#	dir.	hgt.	remarks	loc.
0630	Sooty Tern	1	SW		Sun rise	Begin Diurnal Observations
0635	W.T. Shearwater	1	NW		light phase	
0640	Park-rumped Petrel	1	NE		crissum white clearly not a wedge-tail	
0655	wedge-tail	1	N-NE		light phase	
0707	" "	1	N-NE		light phase	
0709	shear-Pet	1	⊙		small, dark	
0715					squall passing over ship	
0717	wedgetail	1	NE		light phase	
0728	Phoenix Island Shear-Pet	1	N-NE		prob. Kermadec	
0743	Kermadec Pet.	2	N-NW		light phase	
0745	Kermadec "	1	N-NW		light phase	
0747	Pterodroma sp.	1	W			
0758	Kermadec P.	1	W		light phase	
0759	Leach's type	1	W		black w/white rump.	
0805	JFP	1	NW			
T.F. 0822	Sooty Tern	28-5	}		Flock not observed feeding.	
	Fairy Tern	1				
	Shear-pet	5-2				
0825					Rain squalls over eastern horizon	
0832	Kermadec P	1			light phase	
0847	Dark-Rump. Petrel	1	NW		well observed	
0853	Kermadec P?	1	NW		dark underwing, brown dorsal side. Whole head and throat white. Size of Kermadec. very faint white flashes in wing.	
0900	Kermadec P	1	NW			
0901	P. externa	1	W			
0922					Rain squall to E	
0935	Brown Booby	1	NW		" " " NW	
0937	JFP	1	SE			
0942	JFP	1	SE			
0945	RTTB	1			coll. BAN	
0957	Blue-face booby	1			ad. sitting on the O.	
1000	Juan F. Petrel	1	W			
"	Leach Petrel type	1			Black & white rump	
1013	Juan F. Type	1	NNE		Dark brown on back, like underwings & black leading edge	
1053	Juan F. Petrel	1	NNE			
"	Pterodroma sp.	1	S			
1100	Juan F. Petrel	1	W			
1107	Kermadec P.?	1	W			
	Juan F. Type	1	W			
1124	J.F. Petrel	1	W			
1132	J.F. Petrel type	1	NE			
1215	J.F. Petrel	2	⊙			
FF 1216	Sooty Terns	30+	SE			
	shear/petrel	6±				
1300	Booby	1	NNE		immature, dark face markings, dark across back	
1315	Pterodroma sp.	1	⊙		light belly	
1333	Pterodroma hypoleuca	2	S			

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7-28-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

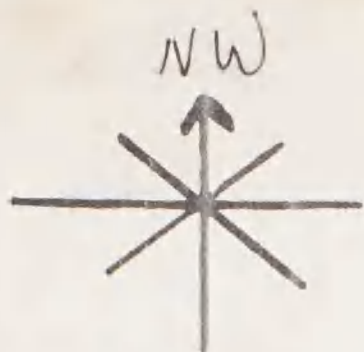
DATE 27 Jan 1966
Pg. # 2



NOON Position: 10-42 N; 164-39 W

	time	species	#	dir.	hgt.	remarks	loc.
	1336	J.F. Petrel	2	W			
	1343	Frigate	1	NW			
TF	1350	Sooty Tern	5	SSE			
	1408	Blue-Faced Boob.	1	Ø		sub-adult	
	1410	Storm-Pet	1	SE		white rump	
	1410	Pepterna	1	N			
	1422	Fairy Tern	1	NE			
	1425					big squall along port side	
	1430	Pterod.	1	Ø		sm. dk.	
	1431	Shear-Pet	1	Ø		Wedgetail or Dark-Rump	
	1447	Kermadec P	1	N		light phase, dark head	
	1510	Wedge-tail	1	NE		Dark phase	
		JFP Type	1	NE			
	1514	JFP	1	NE		Light phase	
	1515	Kermadec P	1	N			
	1518					whale (Squal also)	
	1535	Storm Pet.	1	SE		Didn't get good look	
	1540	Shear-Pet	1	NNE			
	1545	Frigate	1			way out, diving	
	1608	Suan Fernandez	1	Ø			
	1608	shear Pet	1	Ø		white belly	
-NW	1630					change course to NW	
	1653	J.F. Petrel	1	NW			
	1700	J. F. Petrel	1	SE			
	1700	Fairy Tern	1	SE		feeding done twice into 1726	
	1711	Large Pterodroma	1	Ø			
	1727	Juan F. Petrel	1	SE			
	1804	" "	1	SE			
	1805	" "	1	Ø			
	1806					sunset	

SI-MNH-958e
7-28-64



Midnight Position 10-41 N; 166-13 W

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

Nocturnal

DATE 27-28 January 1966
Pg. # 1

time	species	#	dir.	hgt.	remarks	loc.
1806					sun set - begin Nocturnal observations	
2037	Shear-Pet	1	S			
2110	Bird	1				
2115	Sooty T.	1			First heard to west	
2120	Tern or Tropicbird	1			seen flying about 50' above ship.	
2135	" " "	1			" " " " " "	
0310	Sooty Tern	1			heard calling.	
0225	" " "	2	♂			
0245	Shorebird	1	♀		flew at ship	
0257	Kermadec Petrel	1	⊙		light wing patches clearly seen light phase	
0320	Sooty Tern	2	NE			
0415	Bird	1	♀			
0435	Tern	1	♀			
0445	Sooty Tern	1	♀			
0515	Tropicbird	1	♀			
0525	Sooty Tern	1	NW			
0634	Sunrise				end observations	

SI-MNH-958e
7-28-64

Noon Position: ~~12-51N~~ 11-36N, ~~170-40W~~ 168-04W

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

SFC 11
5th Day

DATE 28 January 1966
Pg. # 1



time	species	#	dir.	hgt.	remarks	loc.
0634	Shearwater					
0715	Kermadec Petrel	2	⊙		1 dark - 1 light	
0716	J.F. Petrel	1	⊙			
0743	White neck Pet.	1	SW			
0745	Dark rump Pet. Pterodroma sp.	2	WNW			
0745	W + B	1	⊙			
0750	J.F. Petrel	2	WNW			
0815	JFP	1			following ship	
0826	storm petrel	1	NNW		white rump, vest black	
0850	pterodr. sp.	2	NW			
0901	J.F. Petrel	1	NE			
0916	J.F. Petrel	1	SE			
0923	J.F. Petrel	1	NNW		possibly same as above	
x 0930	Dark Rump Pet.	1			x	
1103	Phoenix/Tahiti	1	SE			
1155	J.F. Petrel	1	SE			
1159	Rain Squall					
1204	J.F. Petrel	1	SE			
1204	J.F. Petrel	1	SE			
1212	G. Frigatebird	2	⊙ NE		both immatures, doing some diving, apparently attempting to fish - no other birds about when first sighted. An Imm. NFBirdy came over and joined them.	
1215	Red-footed Booby	1	→			
1217	Kermadec Petrel	2	SW		1 dark phase, 1 light phase.	
1230	Kermadec Petrel	1	NW		dark phase	
FF 1236	WTTB	1	E			
1300						
1315	Sooty Tern	6	⊙		Rain Squall moving to S - over ship	
1348	Gr. Frigate	1	E		Feeding flock to SW of ship	
1349	Wh-necked Petrel	1	E		flying together	
	Juan F. Petrel	1	E			
1400					Change of heading 260° (N)	
1410	J.F. Petrel	1	NNW			
1416	B.F. Booby	1	⊙			
1538	B.F. Booby	1	N		imm all dark on top	
1605	Pterodroma sp.	1	N			
1637	Juan F. Petrel	1	N			
FF 1704	"W.N." Petrel	2	⊙		all moving ahead of ship	
	Kermadec P.	3	⊙		at least 1 light phase bird	
	Sooty Tern	2	N			

1300 Change course to W ship unable to continue NW in trough.

SI-MNH-958e
7-28-64

NOON Position: ~~12-51N; 170-40W~~
11-36N; 168-04W

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E



DATE 28 Jan
Pg. # 2

time	species	#	dir.	hgt.	remarks	loc.
1715	Storm Petrel	1	N		Black = white rump.	
1814	Sunset				Cease obs.	



Midnight Position: 12-21N; 768-43W
~~14-08N; 172-25W~~

SMITHSONIAN INSTITUTION
 DIVISION OF BIRDS
 AT SEA DAILY LOG -- E

SIC II
 NOCTURNAL

SI-MNH-958e
 7-28-64



NOCTURNAL

DATE 28-29 January
 Pg. # 1

time	species	#	dir.	hgt.	remarks	loc.
1814						
2223	Sooty Tern	1			Begin observations heard, apparently going SE	
2312	" "	1			called three times, headed SE	
2317	" "	3	⊙		heard.	
0030	" "	1	⊙			
0034	" "	3	N-NE		slowed for BT - level one	(Not changed)
0045	" "	1	?		course 235° during BT	
0042	" "	1	⊙		ending at 10	
0100	" "	1	N		Null	
0115	" "	1	?			
0125	" "	1	⊙			
0127	" "	1	?			
0134	" "	1	?			
0145	" "	2	?			
0151	" "	1	?			
0156	" "	2	?			
0210	" "	2	⊙		circle ship	
0218	" "	1	?			
0245	" "	1	?			
0255	" "	1	⊙			
0302	" "	1	⊙			
0310	" "	1	⊙			
0320	" "	2	⊙		2 headed W	
0332	" "	1	⊙			
0336	" "	1	⊙			
0338	" "	1	⊙			
0345	" "	2	⊙			
0348	" "	1	⊙		calling W to W	
0354	" "	1	⊙			
0402	" "	3	⊙		" " " " - covered by heading W	
0405	RTTB	2	⊙			
0409	Sooty Tern	1	⊙		at 1120, the side of ship	
0414	" "	2	⊙			
0422	" "	2	⊙			
0430	" "	1	⊙			
0446	" "	1	N			
0452	" "	1	⊙			
0454	" "	1	N			
0500	" "	1	NE			
0510	" "	3	N			
		2	N			

Midnight Position: ~~14-08 N, 172-25 W~~ 12-21 N; 168-43 W

SI-MNH-958e
7-28-64



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

Nocturnal

DATE 28-29
Pg. # 1

time	species	#	dir.	hgt.	remarks	loc.
0510	Sooty Tern	2	NE			
0520	" "	1	N			
0530	" "	1	N			
0540	" "	1	N			
0627	Kingbird Petrel	1	E			
0630	J.F. Petrel	1	E			
0642	Red-foot Booby	1	C		<i>observed</i>	
0644					<i>Saw v. Sw - Coase <u>NAC</u></i>	

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7-28-64

341

NOON Position: 12-51N; 170-40W

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

SIC 11
6th Day

DATE 29 January 1966
Pg. # 1



ingrid ← not in grid

time species # dir. hgt. remarks loc.

0644					sunrise begin obs.	
0753	Kermadec Petrel	1	SE		white head white light plumage	
0755					rain squall 1 mi to NW	
0809	B7 Booby	1	NE		subadult	
0838	Red F Booby	1	⊙		Subadult.	
0839	Frigate sp	1			Imm. - imm May have been lesser.	
1150	P-B	1				
1207	Kermadec	1	⊙		immature. collected by	
1210	R-F Booby	1	⊙		Feeding	HUSTED
1220	Phaethon	1	⊙			
1221	RTTB	1	⊙			
1230	Bird	1	⊙			
1235					change to 340°	
1245	Fairy Tern	1	SE			
1420	G. Frigate	1	imm		♀	
1425	Shear/petrel	1	SE			
1427	Frigate	2			immature	
1431	RTTB	1	NE			
1546	BFB Booby	1	NNE		subadult	
1549	Phaethon - Tropicbird Petrel	1	NNW			
1551	RT Booby	1	imm		immature	
1620	JFP	1	S			
1635	Booby sp.	1				
	Frigate	1		200'		
1720	RTTB	1			ad. - landed on H ₂ O	
1745	BFB	1			adult.	
1828					sunset, cease obs.	

0644-0744
0744-0844
0844-0944

Midnight Position: 14-08N; 172-25W

SI-MNH-958e
7-28-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

DATE 29-30 Jan.
Pg. # 1



NOCTURNAL

time	species	#	dir.	hgt.	remarks	loc.
1828					sunset, begin observation	
1853	Booby sp	1	NW		large probably Blue-footed	
1955	Sooty Tern?	1			heard by Woody	
2115	Red-footed Booby	1	⊙		imm. apparently trying to land.	
2154	"	1	⊙		appears to be same bird of 2115	
2207	Sooty Tern	1	N-NE		heard only	
2213	" "	1	N-NE		seen. ad.	
2217	" "	1	?		heard	
2250	" "	3	?		"	
2303	" "	1	NW		may have been circling	
2310	" "	3+	⊙		came out of SW, appeared to be going NE	
2320	" "	1			first heard in SW, may have been part of 2310 group.	
2321	Brown Booby	1	⊙		imm. heard only	
2327	sooty Tern	3?	⊙		" "	
2335	" "	1	⊙		" "	
0013	" "	2	⊙		first heard to SW. (adult) appears to possibly be heading NW.	
0125	" "	2			First heard to the west.	
0145	" "	1			heard.	
0300						
0317	Sooty Tern	1	N		change course to 045	
0321	" "	1			calling off to E	
0339	" "	2	NE			
0358	" "	1	⊙			
0404	" "	1	NW			
0423	" "	2	NW			
0453	" "	1	NW			
0630	Shear-Pet	1	⊙			
0659					Sun rise	

Noon Position: 15-09 N; 171-52 W

SI-MNH-958e
7-28-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

DATE ~~30~~ January 1966
Pg. # 1



with pump → westward

time	species	#	dir.	hgt.	remarks	loc.
0659					Sunrise	
0714	RFB	1			imm., following ship	
0716	W-Necked Petrel	1	NNE			
0724	WTTB	1			following ship	
0815	WTTB	1			following ship	
0830						
0839	AFB	1	⊙		stopped for BT & repair of Radio Antenna	
0925					Turned about to 250° @ slow speed.	
0945	R-F Booby	1			Put about to regular heading 56° and resumed speed	
1128	W-Necked Petrel	1	SW		looks like bird recorded at 0839	
1150	RTTB	1	⊙		ad.	
1220	Pterodroma sp.	1	⊙			
1345	Red Foot Booby	1			imm.: settled on H ₂ O	
	Blue-faced "	1			" " " "	
1519	Red-foot	3	NE		imm.	
1525	" "	1	NE		immature	
1710	BF Booby	2	NE		1 immature + 1 adult	
1729	d. F. Petrel	1	NW			
1810	RF Booby	1	⊙		sub ad.	
1821	Sunset					

065

SI-MNH-958e
7-28-64



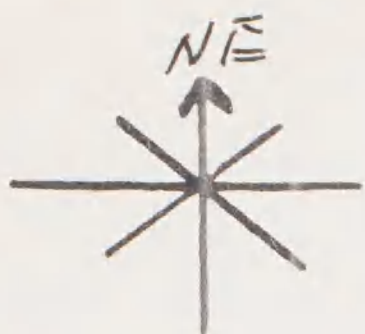
Nocturnal
SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E
Midnight Position: 16-14N; 170-18W

DATE 30-31 January 1966
Pg. # 1

time	species	#	dir.	hgt.	remarks	loc.
1821					sunset - Begin Nocturnal Obs.	
1945	Sooty Tern	2	0			
2010	RFB	1	0			
2055	Sooty Tern	2	SE			
2100	BFB	1				
2104	Booby	1	J			
2114	Sooty T.	3	N			
2119	" "	"	N			
2138	" "	2	?			
2145	" "	1	?			
2145	" "	1	NNW			
2150	" "	10	±3 NNW			
2155	" "	4	N			
2205	" "	2	?			
2212	" "	2	N			
2222	" "	3	N			
2226	" "	3	N			
2245	" "	3	-			
2250	" "	5	N			
2250	" "	4	N			
2303	" "	2	?			
2306	RFB	1			imm. collected 9PT	
2310	Sooty T.	15	±5		milling about for 10 minutes	
2325	" "	4	?			
2330	RFB	1			imm. collected 9PT banded	
2330						
2337	Sooty Tern	3	E			
2345	" "	3	E-NE			
2355	" "	2	0			
0003	" "	5	0		then headed E	
0010	" "	3	NE			
0018	" "	10	N			
0027	" "	8	N-NE			
0035	" "	3	NE		low over H2O	
0050	" "	2	NE			
0055	Red-foot Booby	1	NE		imm.	

Midnight Position: 16-14N; 170-28W

SI-MNH-958e
7-28-64



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

Nocturnal

DATE 30-31 January 1966
Pg. # 2

time	species	#	dir.	hgt.	remarks	loc.
0105	Sooty Tern	2	NE		high.	
0129	" "	2	E-NE			
0140	" "	1	N			
0145	" "	2	N			
	Red-foot Booby	1	NE		ad.	
0158	Sooty Tern	3	NE			
0217					Johnston Atoll 27.2 miles ahead.	
0225					Rain squall passing over ship.	
0305	Sooty Tern	1	⊙			
0345	" "	2	N			
0352	" "	1	⊙			
0358	" "	1	NW			
0410	" "	3	⊙			
0414	" "	1	E			
0417	" "	1	W			
0422	" "	1	NE			
0521	" "	2	⊙			
0545	Fairy Tern	2	E			
0600					End Nocturnal Observations Due to closeness of Johnston Is. 3mi	

139

11.30

11.30
11.30
11.30

12.30
12.30
12.30

12.30 at Bridge

ON 75282

SI-MNH-958e
7-28-64

Noon Position: Johnston ~~Island~~ ^{Atoll}

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

DATE 31 January 1966
Pg. # 1



	time	species	#	dir.	hgt.	remarks	loc.
TF	0630	Brown Booby	5	W		coming from sand Johnson Is	
	0632	Booby sp	1	E		"	
	0637	Brown Booby	1	E		"	
	0644	"	2	E		" Nocturnal	
	0649	Booby sp.	2	E		" ↑	
	0649	Sunrise					
	0652	Red F. Booby	2	E		"	
	0654	G. Frigatebird	1	SE		Female coming from Sand Johnson	
	0655	Sooty Terns	3	SE		From Sand Johnson	
	0700	R. F. Booby	4	SE		2 immature	
	0700	R. F. Booby	1	E		Adult	
	0701	R. F. Booby	1	E		ad.	
	0701	Sooty Tern	2	S		ad.	
	0702	Sooty Terns	2	S		ad.	
	0703	C. Noddy T	1	S			
	0703	R. F. Booby	2	S			
	0704	Sooty Tern	4	S		ad.	
	0705	" "	3	S		ad.	
	0705	" "	1	S		ad.	
	0706	RFB	2	S			
TF	0706	RFB	10	S		5 ad, 4 imm	
	0706	Sooty Tern	2	N		ad.	
	0706	Noddy T. sp.	1	S			
	0707	RFB	4	S		ad.	
TF	0707	RFB	4	S		ad.	
	0707	Brown B.	1	S		} Flying together	
	0708	RFB	1	S			adult
	0708	Brown Boob.	1	S		ad.	
	0709	" "	1	S		imm.	
	0711	" "	1	S			
	0711	Sooty T.	2	S		ad.	
	0716	Sooty tern	2	S		ad.	ship presently 1.2 mi. off J.I. - Drifting.
	0722	Brown Boob.	1	S		adult.	
TF	0723	" "	8	S		6 adult, 2 imm.	
	0725	" "	1	S		ad.	
	0725	Fairy Tern	1	S		white	
	0730						CLOSE OBSERVATIONS AT SEA BUOY.
	1615	Departing Johnston				thousand of Sooty Terns coming in from S-SE,	
	1620	Brown Boob.	1			Departing Johnston ^{Island} heading S-SE	
TF	1635	Sooty tern	20+	NW		directly toward Johnston.	
TF	1638	Sooty tern	8	NW			
TF	1639	"	9	NW			

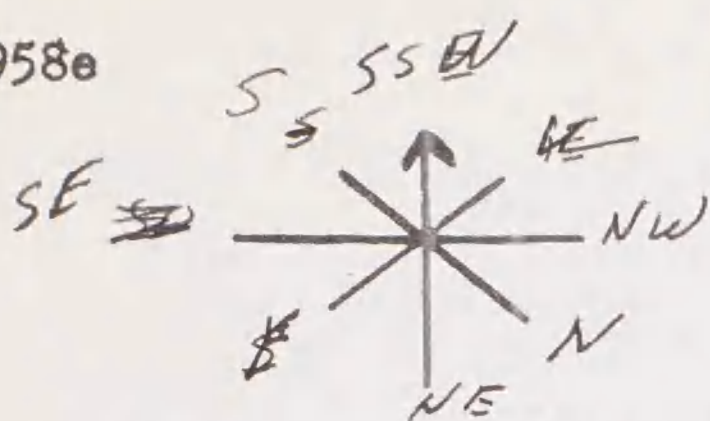
Noon Position: Johnston Atoll

SI-MNH-958e
7-28-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

SIC #

DATE 31 January 1964
Pg. # 2



	time	species	#	dir.	hgt.	remarks	loc.
TF	1640	Sooty tern	28	NW		direct sand. N. Travelling.	
TF	1647	" "	30	NW		" " "	
	1653	" "	2	N			
TF	1655	" "	13	N		travelling.	
TF	1658	" "	22			heading towards sand - hight ca. 150'	
	1658	Frigate	1	N		♀	
	1700	Sooty Tern	3	N			
	1700	Sooty Tern	1	N			
TF	1702	" "	8	N			
TF	1703	" "	22			N - towards Johnston atoll.	
TF	1705	" "	5			" " "	
	1714	" "	3	N		" " "	
	1715	" "	2	N		" " "	
TF	1720	" "	20	N		" " "	
	1721	Great Frigate	1	N		" " "	
	1722	Sooty tern	2	N		" " "	
	1723	RF Booby	2	N		" " "	
TF	1724	Sooty tern	15	N		" " "	1 Ad; 1 imm
TF	1725	" "	10	SW		" " "	
	1730	Fairy tern	1	SSW		" " "	
	1740	sooty tern	3	NE		" " "	
OS.	1745	Sooty tern	2	NE		1 ad with orange streamer	
TF	1745	RF Booby	2	NE		2 Ad; 2 SQA, 5 Imm	
	1745	Great Frigate	4	NE		all females	
TF	1751	Sooty tern	10	NE			
	1751	RF Booby	3	NE			
	1807	" "	3	NE			
	"	Sooty Tern	1	NE			
TF	1813	" "	24	NW			
	1820					Sunset	

Midnight Position: 15-25N; 170-06W

Nocturnal

SI-MNH-958e

7-28-64

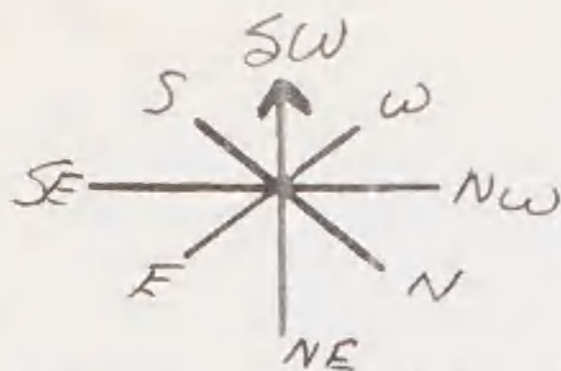
SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

DATE

~~31 Jan~~ - 1 Feb 1964

Pg. #

1



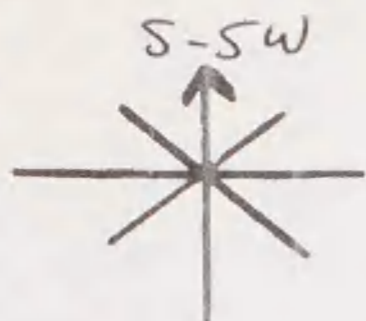
time species # dir. hgt. remarks loc.

time	species	#	dir.	hgt.	remarks	loc.
1820					Heading 204° Sunset	
1821	Red-footed Booby	1	NE			
TF 1832	Sooty Tern	7	NE			
1845	Brown Booby	1	☉			
1846	Sooty Tern	1	☉			
1850	" "	2	☉			
1900	Bird	1	☉			
1904	Sooty Tern	1	NE			
1916	"	1	NE			
1920	"	1	NE			
1925	Booby sp.	1	NE			
1927	Sooty Tern	2	NE		Imm	
1931	Red-f. Booby	1	☉			
1932	Sooty Tern	2	NE			
1936	Red f. Booby	2	☉		1 Ad 1 Imm	
1939	Sooty Tern	3	NE			
1941	"	2	NE			
1945	"	4	NE			
1947	Red-f. Booby	1	☉			
"	Frigate-bird	1	☉			
"	Sooty Tern	1	NE			
2007	"	2	NE			
2015	Bird	1	NW			
2021	Sooty Tern	2	NE			
2028	Red-f. Booby	1	☉		Imm	
2043	Sooty Tern	2	NE			
2050	Bird	1	☉			
"	Red-f. Booby	1	☉		Same Imm.	
2052	Sooty Tern	1	NE			
2057	Sooty Tern	1	☉			
2115	" "	1	☉			
2116	Red-foot Booby	1	☉		Imm.	
2130	Sooty Tern	2	N			
2140	" "	1	☉			
2150	" "	4+	☉			
2200	" "	1	S-SW			
2207	" "	2	N-NE			
2217	" "	2	N-NE			
2225	" "	1	N-NE			
2248	" "	1	☉			
2252	Brown Booby	1	☉			
2254	Sooty Tern	1	☉			

Course changes as much as 90° due to ~~helm~~ helmman

Midnight Position: 15-25N; 170-06W

SI-MNH-958e
7-28-64



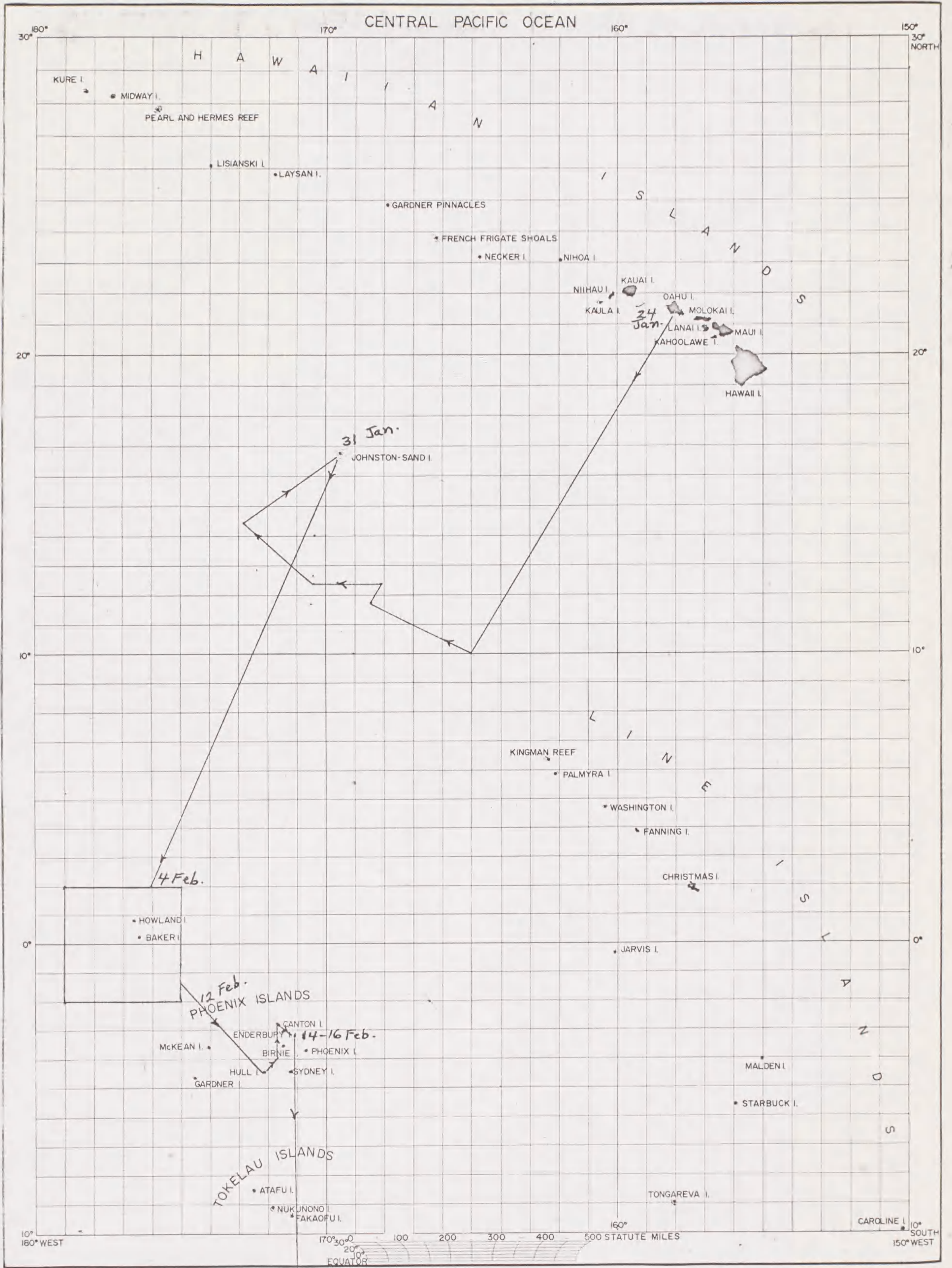
SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

DATE 31 Jan - 1 Feb 1966
Pg. # 2

Nocturnal

time	species	#	dir.	hgt.	remarks	loc.	
2305	Sooty tern	1	N-NE				
2311	" "	1	☉				
2315	" "	1	☉				
2335	" "	2	NNE				
2356	" "	1	☉				
2356	Red-foot B	1	☉				
0003	Sooty tern	1	☉				
0010	Brown Booby	1	☉				
0020	Red-foot Booby	1	☉				
0021	Sooty Tern	2	☉				
0130	" "	2	SW				
0145	" "	4	☉				
0230	" "	2	☉				
0245	" "	2	NE?				
0311	" "	1			calling off to NE		
0317	" "	2	☉				
0322	" "	1	NE				
0335	" "	1	N				
0344	" "	1	☉				
0406	" "	1	NE				
0421	" "	2	☉				
0550	" "	1	☉				
0649	Shearwater sp.	1	NW		small: no color noted.		
0651	SUNRISE - CLOSE NOCTURNAL OBSERVATIONS.						

At-Sea SIC 11 - first half. 24 Jan - 18 Feb. 1966



To Samoa
Via Swains Is. 18 Feb.

AT-SEA SIC 11 24 January - 4 February 1966.
Oahu to Southern Grid via Johnston Atoll

	24	25	26	27	28	29	30	31	1	2	3	4	TOTALS
Black-foot Albatross	2	1											3
Laysan Albatross		1							1				2
Wedge-tailed Shearwater	1		1	5							209	42	258
Christmas Island Shearwater			1								23	1	25
Newell's Shearwater											6		6
Audubons Shearwater											2		2
Kermadec Petrel				10	8	2			3	2			25
Phoenix Island/Tahitian Pet.					1	1					2		4
White-necked Petrel					4		2						6
Juan Fernandez Petrel	1			22	20	1	1		1	1	2	3	52
<i>Pterodroma externa</i>				2								1	3
Black-winged Petrel											3		2
<i>Pterodroma hypoleuca</i> ?				2									2
Dark-rumped Petrel				2	1								3
Bulwer's Petrel											10	5	15
Shearwater-Petrel		2	3	21	5	2	1		1	6	49	23	113
White-throated Storm Pet.												1	1
Leach's Storm Petrel											3	2	5
Storm Petrel species		2	2	4	2						48	19	77
Red-tailed Tropicbird			2	1		3	1		1	2	1	1	12
White-tailed Tropicbird		3	10		2		2		1	1	1	3	23
Tropicbird species		2											2
Blue-faced Booby				2	2	3	3			1		2	13
Brown Booby	23		1	1				15					40
Red-footed Booby	23	9	9		1	4	9	48	6			4	113
Booby species	3		1	1		1							6
Great Frigatebird			4	2	3	1		7	1	1			19
Lesser Frigatebird												2	2
Frigatebird species						4							4
Pomarine Jaeger	70												70
Jaeger species	3												3
Sooty Tern	27	196	54	56	8			284	10	104	564	255	1558
Gray-backed Tern												2	2
Common Noddy Tern								1			4		5
Fairy Tern		7	1	3		1		2		2	1		17
Tern species								1					1
Misc. unidentified	6	6	2			1				2		1	18
TOTALS	158	230	91	134	57	24	19	358	25	122	927	367	2512

AT-SEA SIC 11
Southern Grid to Samoa via Swains I.

12-18 February 1966

	12	13	14	16	17	18	TOTALS
Wedge-tailed Shearwater	3	4	5	17	8	23	60
Christmas Island Shearwater				1			1
Audubons Shearwater	3			1	1		5
Phoenix Island Petrel			1				1
Bulwers Petrel		2			1		3
Shearwater-Petrel						2	2
Leachs Storm Petrel					1		1
Harcourts Storm Petrel			1				1
Storm Petrel Species	14	2	5	12	9	3	45
White-tailed Tropicbird					7	1	8
Blue-faced Booby	6	9	4	5			24
Brown Booby		5	17	1		1	24
Red-footed Booby	1	3		5	2	1	12
Booby species	1						1
Great Frigatebird			5				5
Lesser Frigatebird					9		9
Frigatebird species			19	1	5		25
Golden Plover				2	1		3
Ruddy Turnstone				6			6
Sooty Tern	193	155	50	79	23		500
Gray-backed Tern	71	6	8	11			96
Common Noddy Tern		12	9		195	3	219
Hawaiian Noddy Tern		3		6			9
Blue-gray Noddy Tern			1				1
Fairy Tern	21	2	2		140	27	192
Tern species	5		62	4	28		99
Misc. unidentified	11			4	4		19
TOTALS	329	203	189	155	434	61	1371

Pat

XI

A
PRELIMINARY REPORT
ON
SOUTHERN ISLAND CRUISE
NUMBER ELEVEN
(ISLAND REPORT)

BY
Max C. Thompson

ITINERARY

Date	Island	Depart	Arrive
January 24	Oahu	0900	
February 5	Howland		0600
	Baker		1300
February 7	Baker	0630	
	Howland	1330	
February 13	Hull		0630
		1300	
February 14	Enderbury		1300
February 16		0635	
February 18	Swain's Island	1130	0730
February 19	Samoa (Pago Pago)		0800
February 23		1130	
February 24	Swain's Island	1230	0830
February 27	Baker Island		1330
	Howland Island		1730
February 28	Baker Island	1830	
March 1	Howland Island	0730	
March 11	Christmas Island		0830
March 15		0345	
March 19	Oahu		2230

by

Max C. Thompson

SIC 11 departed Honolulu with a complement of nine personnel aboard, including Max C. Thompson (Biologist-in-charge, island work), Richard S. Crossin (Biologist-in-charge, at-sea work), Brian Harrington, Norman Heryford, Robert DeLong, James Lewis, Dayle Husted, Frank Smith and Jeff Tordoff. Tordoff was returned to Honolulu from Canton Island due to illness. DeLong returned to Honolulu from Pago Pago. The second half of the trip was made with a complement of seven personnel. Support was given by the USNS Shearwater (T-AG 177) with G. Krull, Master. The usual cooperation was received.

Bird populations were generally low. The first half of the trip resulted in the banding of approximately 900 birds. The second half of the trip showed an improvement with about 28,000 birds being banded, mainly on Christmas Island. The trip banding total of 28,755 was an all time low for the POBSP. This season of the year has consistently produced low banding totals and represents that period in which most of the birds are between nesting cycles. The second half of the trip was beginning to show signs of a population increase on Howland and this will be discussed below.

A brief summary of the island work and the more important elements in the avifauna are discussed below. Tables listing the different compilations from the islands can be found at the back of the report.

Howland Island

After an absence of nearly one full year, Sooty Terns were again swirling over the island. The following is a daily activity account showing the swirling behavior and number of birds:

6 February

- 1530 Small swirl over SE end of island (30).
 1555 " " " (75).
 1610 Swirl broke up.
 1640 Swirl forming over SE end of island (125).
 1700 Swirl Broke up.
 1705 Swirl alternately breaking and forming.
 1725 Swirl over end of island contains 250 birds.
 1745 Swirl over sea west of island (100).
 1810 SE swirl has 1000 birds.
 W swirl has 250 birds
 Much interchange between swirls.
 1830 New swirl over lighthouse (200).
 Three swirls now present.

1830-0130

Swirls amalgamated into SE swirl and swirl over lighthouse. Each swirl probably had 2-3000 birds. Birds departed from the island at 0130.

28 February

- 0200 Many terns still calling over the lighthouse.
 0300 Only a few terns were calling.

0400 No terns present.

0400-1530

Occasionally Sooty Terns were seen flying over the island, but rarely more than 3-4 at one time.

1530 30 terns flew over lighthouse but back to sea.

1550 50⁺ off west shore, 100⁺ off SE shore both groups moved over land and then back to sea.

1558 SE swirl again moved over land but moved back to sea shortly.

1603 SE swirl broke up but immediately started reforming over water.

1605 W swirl (50) came in over island and formed a loose swirl.

1700 200 terns in swirl over center of island; 300 terns over SE section; 100 terns off W shore. Groups forming and breaking up constantly.

1800 1000 terns over SE shore; 500 over S end; 500 over lighthouse. Groups appear to be stabilizing.

1900 Two southern swirls merged and single group (5000+) over SE shore; 1500 over lighthouse. Impossible to estimate numbers after dark but calling and flying around the island again ceased around 0300.

From past behavior of Sooty Terns we feel certain that the terns will be down within a month or two to begin a new nesting cycle.

The second trip shows that the Howland nesting season was

beginning in earnest. The Blue-faced Booby nests had increased within a month from 49 nest to 111; Red-footed Booby 15 to 21 and the Great Frigatebird from 0 to 11. The shorebird survey showed an increase in the number of birds of the three species recorded.

Baker Island

Baker Island continues to show little bird activity except for the Common Noddy Tern breeding at the lagoon on the east side of the island. On both visits this trip a small Blue-faced Booby club was found on the south shore of the island.

Approximately 400 Common Noddy Terns were utilizing the lagoon nesting area. There were 25 eggs found on the island in early February and 92 in late February. The young in early February numbered 70 and in late February 19. A total of 65 young and 33 adults were banded.

The daily activity on Baker Island was limited to a few Sooty Terns and frigatebirds flying overhead with Blue-faced Boobies gathering in a small club on the south side of the island in the evening. There were no Blue-faced Boobies banded during the first visit of SIC 11 but 10 were banded out of 40 handled the second visit.

The shorebird population was generally down from early February except for the Ruddy Turnstones which increased in number from 159 to 200+.

The House Mouse populations were high both trips and six blood pools were taken.

The weather machines set up in early February functioned

poorly and only one machine recorded any usable data. This record showed the wind to blow generally from the northeast during the month of February at a speed of 10 mph. The machines were reset but only one was working and one was removed from the island.

Hull Island

Approximately four hours were spent on the island to determine if Sooty Terns were breeding. They were not but swirls over the island indicated that possibly they may be by early April. A swirl of 3000 was noted over the lagoon in the morning.

Fourteen species of birds were seen on the island including a New Zealand Cuckoo, Eudynamys taitensis. This was the first record of this species for the island. Also seven Crested Terns were seen flying around the atoll. This species is not common in the Phoenix Island group.

Enderbury Island

Enderbury Island showed signs of recent rains with the central depression containing approximately 10 acres of water. The islands in the depression were flooded, preventing some of the usual birds from nesting, i.e. Common Noddy Tern and Gray-backed Tern. The water attracted large numbers of shorebirds with 544 Golden Plovers, 627 Ruddy Turnstones, 74 Wandering Tattler and 35 Bristle-thighed Curlews. Also three Pintail Ducks were seen.

Although Sooty Terns were not nesting, there were at least two small groups on the ground and an estimated 5000 swirling

over the island. These birds should be coming down in a few weeks to breed.

Only two small clubs of Blue-faced Boobies were seen on the island and no evidence of breeding was observed.

Most of the time was spent banding Great Frigatebirds and a few Lesser Frigatebirds. The Great Frigatebird colony numbered approximately 5000 birds of which 80 nests were found. The Lesser Frigatebirds had apparently just finished the breeding season as nearly all birds banded were immatures. The Greater Frigatebirds appeared to be going into another nesting cycle as many displaying males were seen.

The usual roosting population of Hawaiian Noddy Terns was roosting in the Cordia at the north end of the island. Blue-gray Noddies were seen regularly around the central depression and one flock of 35 was seen resting in the Sesuvium.

Swain's Island

An emergency stop was made at Swain's Island to take in supplies for the people. The hurricane that struck in late January had destroyed most of their basic supplies. About 8 hours total was spent on the island on both stops. The island was small and entirely covered with coconuts with what indigenous vegetation that was left, growing underneath. A few large Pisonia were present and several other trees which could not be identified.

The mammals taken on the island were Rattus exulans and were collected with .22 dust shot. These animals were abundant on the island and were seen running in and out of the

piles of coconut husks.

The birds on the island consisted of nine species. Since this is the first visit to this island, a species account follows:

Golden Plover--Common around the periphery of the island and along the trails in the coconuts. One was collected out of an estimated 50 seen.

Ruddy Turnstone--Several small flocks were seen feeding on the reef surrounding the island. The total island population was estimated to be 60.

Wandering Tattler--This species was seen singly feeding along the outer reef at low tide. It was not nearly as common as the two former species with only 30 being seen.

Sanderling--One bird collected on the south side of the island on sand beach.

Common Noddy Tern--Abundant in the coconuts where many were seen sitting on the fronds. It was undoubtedly breeding there as the five specimens taken had brood patches.

Hawaiian Noddy Tern--This species was not common and only 200 were seen feeding around the reef. It undoubtedly occurs in larger numbers during the breeding season as the habitat is nearly like that of the Tokelau Islands where it was breeding in abundance.

Sooty Tern--Three birds were recorded from the island on the last trip as the ship was departing.

Fairy Tern--The most abundant bird on the island. The population was estimated to be 3000. Several were seen sitting in Pandanus and were thought to be incubating eggs.

New Zealand Cuckoo--This species although not unexpected, was certainly not expected in the numbers seen. We estimated a population of 50 on the island. This seems an exceptionally early migration date but the literature has not been surveyed.

The island had no bandable bird populations.

Christmas Island

Since an extra day was picked up during the course of the trip, we spent four days on Christmas Island instead of the intended three. The Sooty Tern populations were just completing the breeding cycle and had many flying young. Two colonies were investigated and worked, i.e. Four Wells at the north end of the island (probably formerly called Northwest Point but several miles east of there) and one at the southern end of the island at Aeon Point. There was another colony at Isles Lagoon area but it was not investigated. Both colonies worked, probably had an aggregate of 350,000 birds. We banded 27729 Sooty Terns in four nights banding. Fifty-one returns from birds banded in July 1965 were obtained at Four Wells.

The three main islands in the lagoon were worked but briefly. One full night was spent on Motu Upua to bleed and band petrels and shearwaters. The Phoenix Island Petrel and Christmas Island Shearwater were both in various stages of the breeding cycle from fresh eggs to fledged young. The Christmas Island Shearwaters were also in the same stage. The Wedge-tailed Shearwater were present but not breeding except for one pair which had a 3/4 grown chick in a burrow. Motu Tabu was worked briefly one afternoon for shearwater/petrels and Cook Island was visited about one hour to determine whether the Sooty Terns were breeding

there now or not. The colony was just finishing and had 3 young left. The Crested Tern colony had also just finished up and only two large young remained.

Isles Lagoon and Manula Lagoon were not surveyed due to insufficient time.

A folder containing all of the bird information from the District Commissioners files on Christmas Island was given to us by the Commissioner (for a fee of \$20).

Table 1. Banding

	Howland	Baker	Enderbury	Christmas
Wedge-tailed Shearwater				254
Christmas Island Shearwater				125
Phoenix Island Petrel				532
Red-tailed Tropicbird				1
Blue-faced Booby	5	10		
Brown Booby	9		24	
Red-footed Booby	64		89	
Great Frigatebird	18		576	
Lesser Frigatebird			140	
Golden Plover			1	
Sooty Tern				26800
Common Noddy Tern		98		
Fairy Tern				18
Blue-gray Noddy Tern			1	
ISLAND TOTAL	96	108	831	27730
GRAND TOTAL	28765			

Table 2. Returns

	Howland	Baker	Enderbury	Christmas
Wedge-tailed Shearwater				27
Christmas Island Shearwater				22
Phoenix Island Petrel				45
Red-tailed Tropicbird			1	
Blue-faced Booby	168	37	111	
Brown Booby	2			
Red-footed Booby	25		66	
Great Frigatebird	1			
Sooty Tern				51
Common Noddy Tern		5		
ISLAND TOTAL	196	42	178	145
GRAND TOTAL	561			

Table 3. Recoveries

	Howland	Enderbury	Christmas
Christmas Island Shearwater			4
Phoenix Island Petrel			2
Blue-faced Booby	9		
Lesser Frigatebird	1		
Great Frigatebird		6	
Sooty Tern			2
ISLAND TOTAL	10	6	8
GRAND TOTAL	24		

Table 4. Blood Samples

	Howland	Baker	Hull	Enderbury	Christmas
Wedge-tailed Shearwater					30
Christmas Island Shearwater					23
Phoenix Island Petrel					33
Blue-faced Booby	132	5		110	
Brown Booby	9				
Red-footed Booby	48			25	
Great Frigatebird	13			70	
Lesser Frigatebird				1	
Ruddy Turnstone		2			
Sooty Tern			2		105
Common Noddy Tern		1			5
House Mouse		6			
ISLAND TOTAL	202	14	2	206	196
GRAND TOTAL	620				

Table 5. Specimens Collected

	Howland	Baker	Hull	Enderbury	Christmas	Swain's
Golden Plover						1
Ruddy Turnstone		3		2		
Wandering Tattler			1			
Bristle-thighed Curlew			1			
Sanderling						1
Sooty Tern			3		50	
Common Noddy Tern					5	5
Hawaiian Noddy Tern						1
Fairy Tern						5
Crested Tern					2	
New Zealand Cuckoo			1			1
Line Island Warbler					2	
House Mouse		4				
Polynesian Rat						12
ISLAND TOTAL	0	7	6	2	60	26
GRAND TOTAL	102				59	

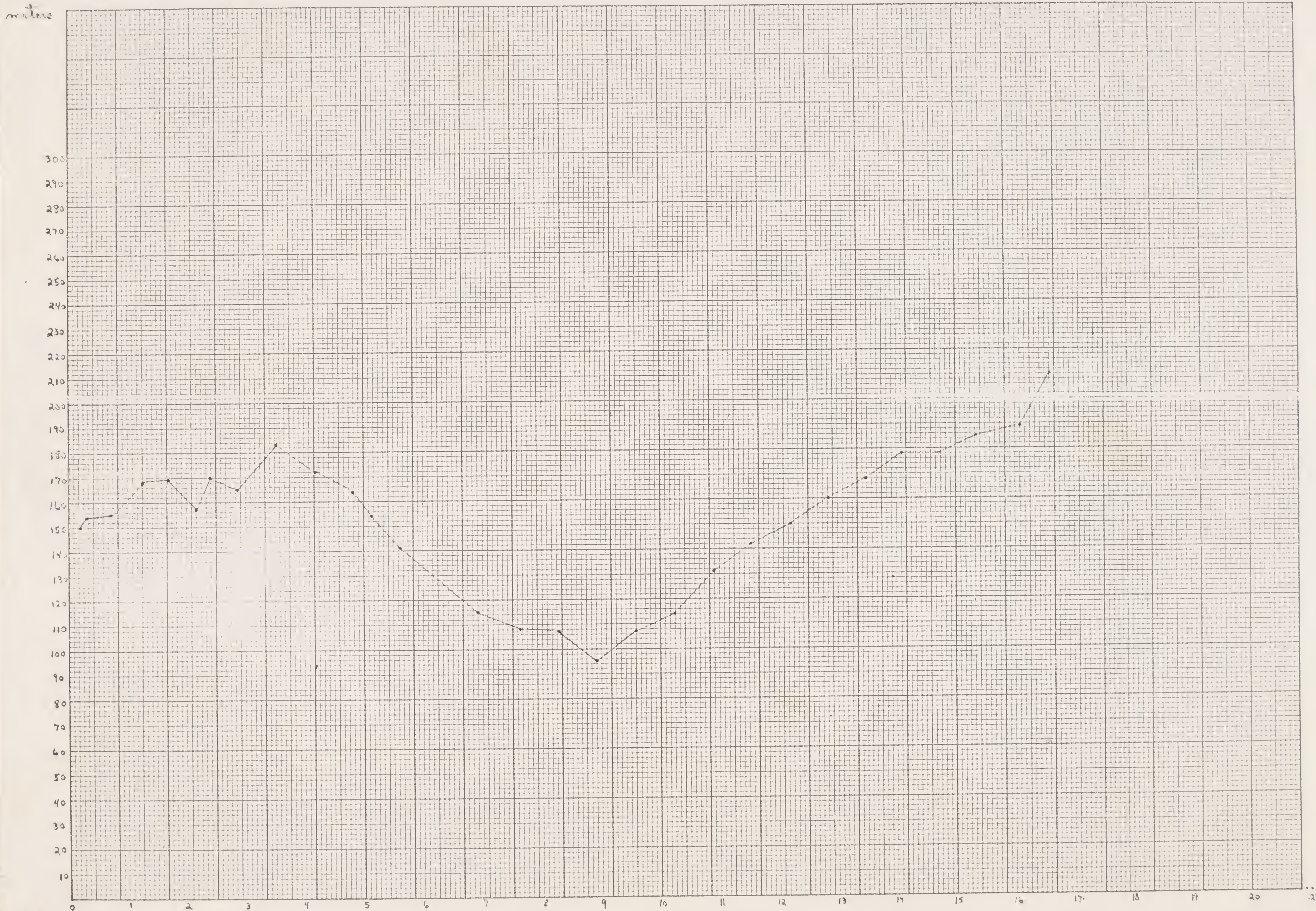
USNS

Shearwater Cruise 11/12

Jan. - March 1966

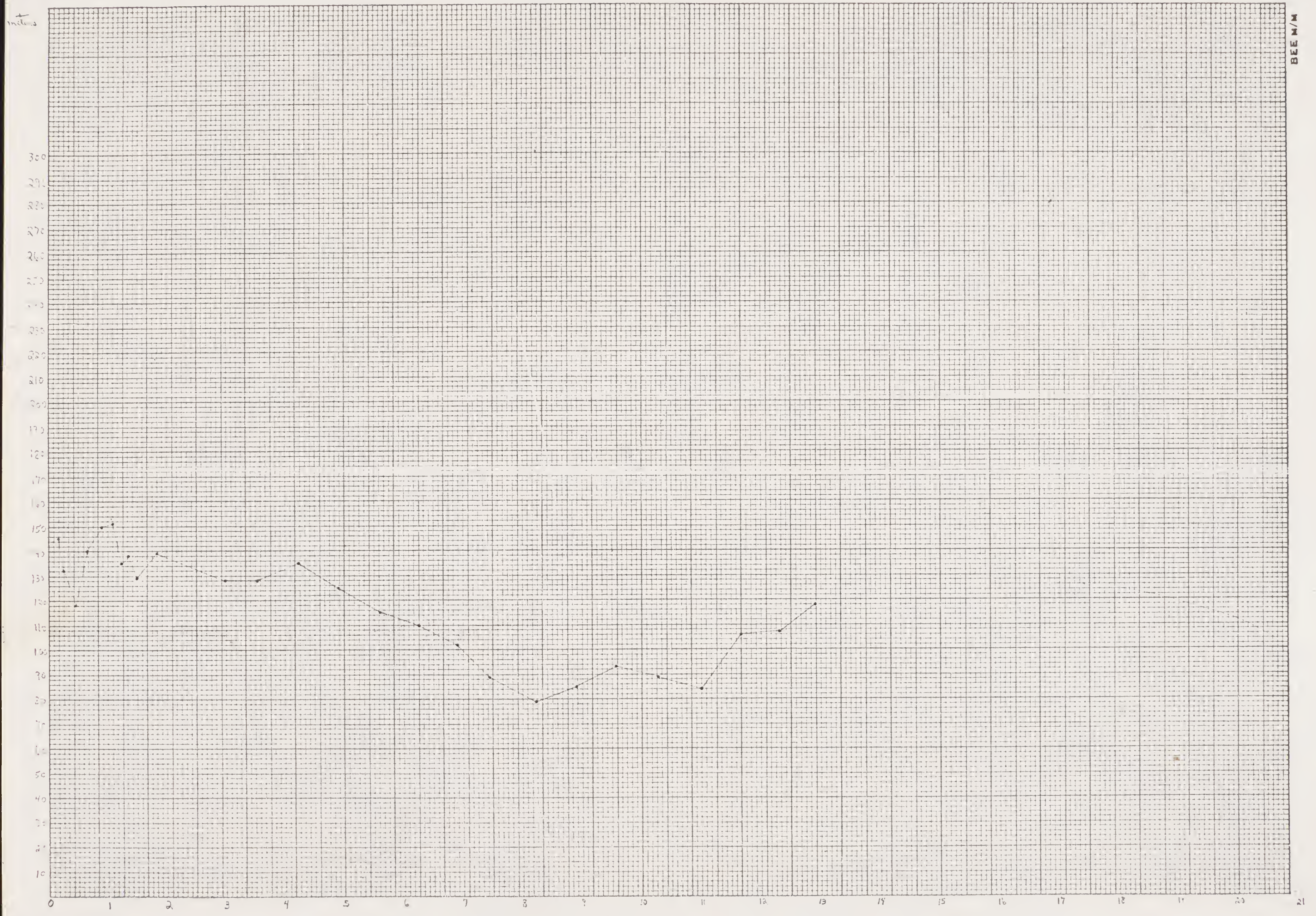
(25° depth)

Feb



Stat.

USNS Shearwater Cruise 1112 Jan. - March 1966 (20° depth) 0° to Honolulu
Mar



stat. →

USNS

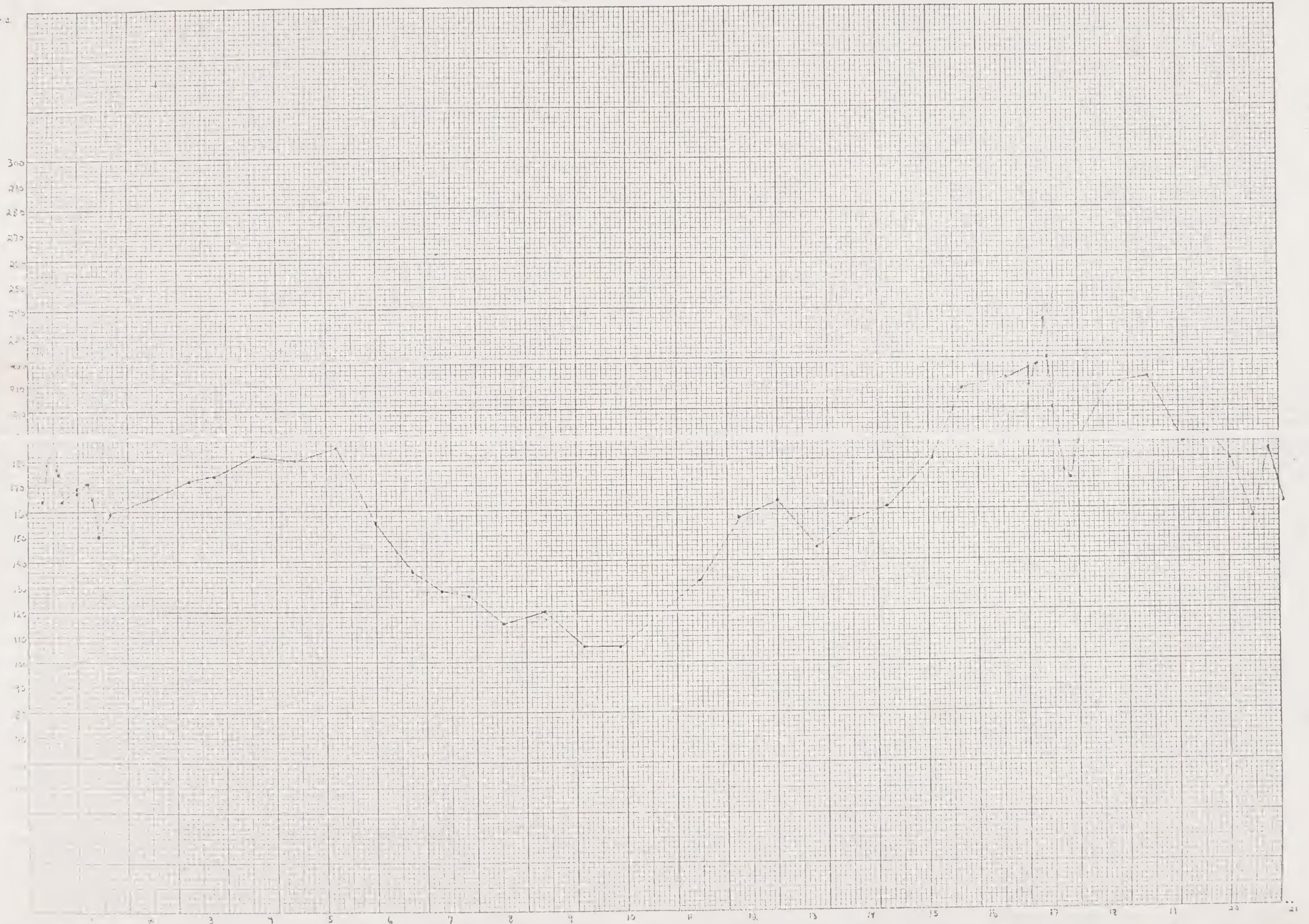
Shearwater Cruise 13

March - May 1966

(20° depth)

Apr

meters



USNS

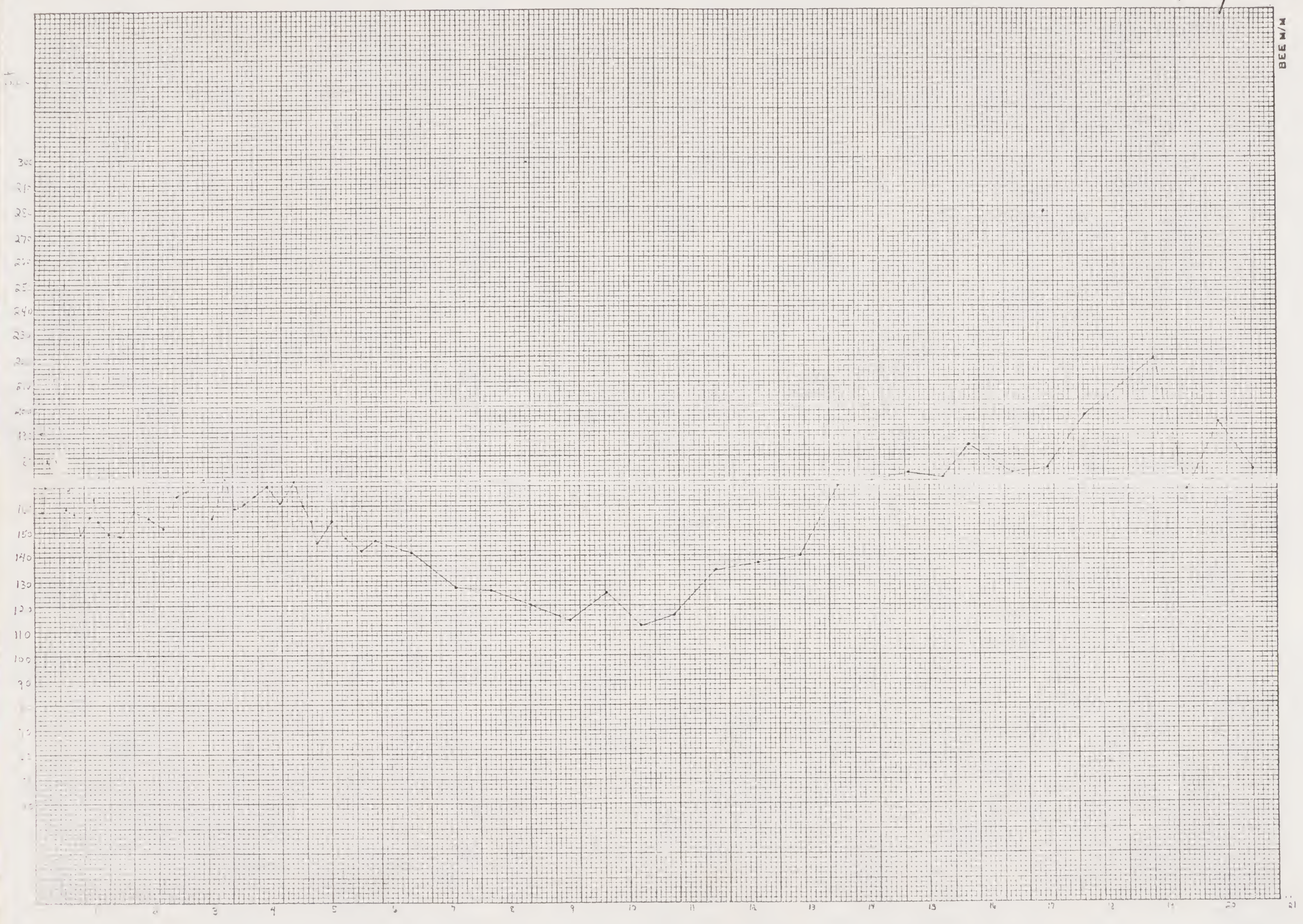
Shearwater

Cruise 13

March - May 1966

(20° depth)

0° To Honolulu
May



USNS

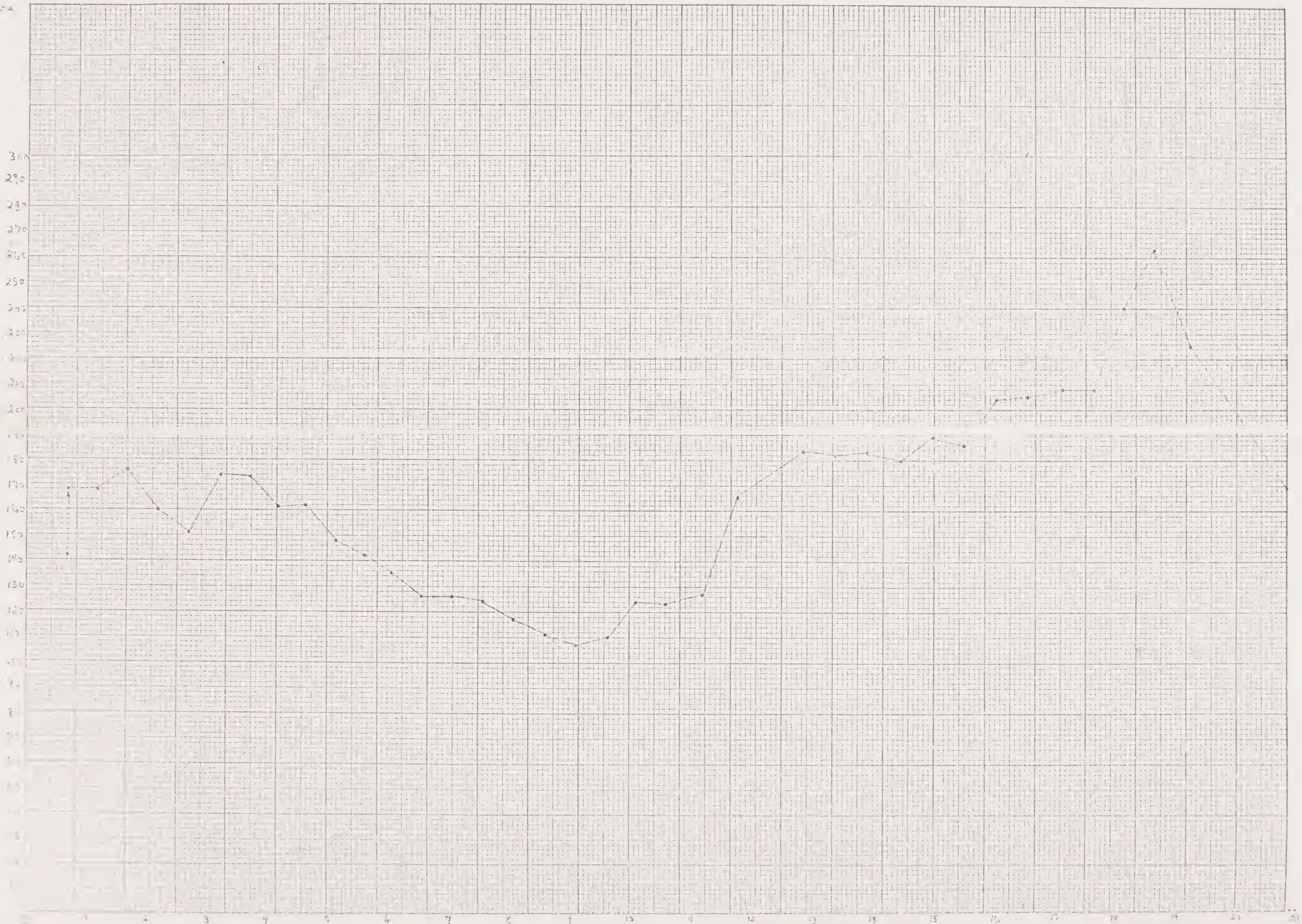
Shearwater

Cruise 14

July 1966

(20° depth)

meters



USNS

Shearwater

Cruise 14

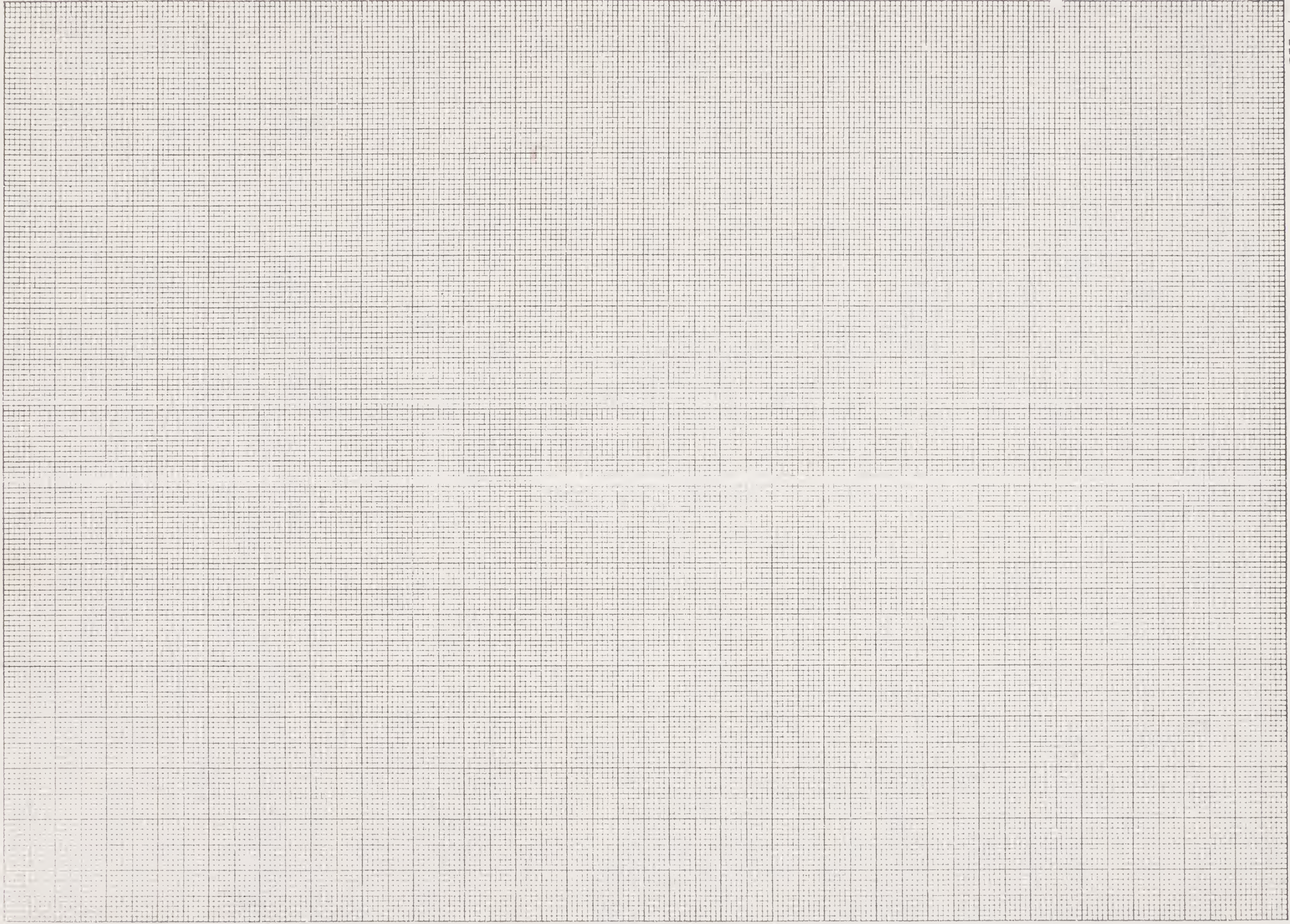
July 1966

(20° depth)

0° to Honolulu

Aug

BEE M/M



No return depth readings!

Shearwater

Cruise 19

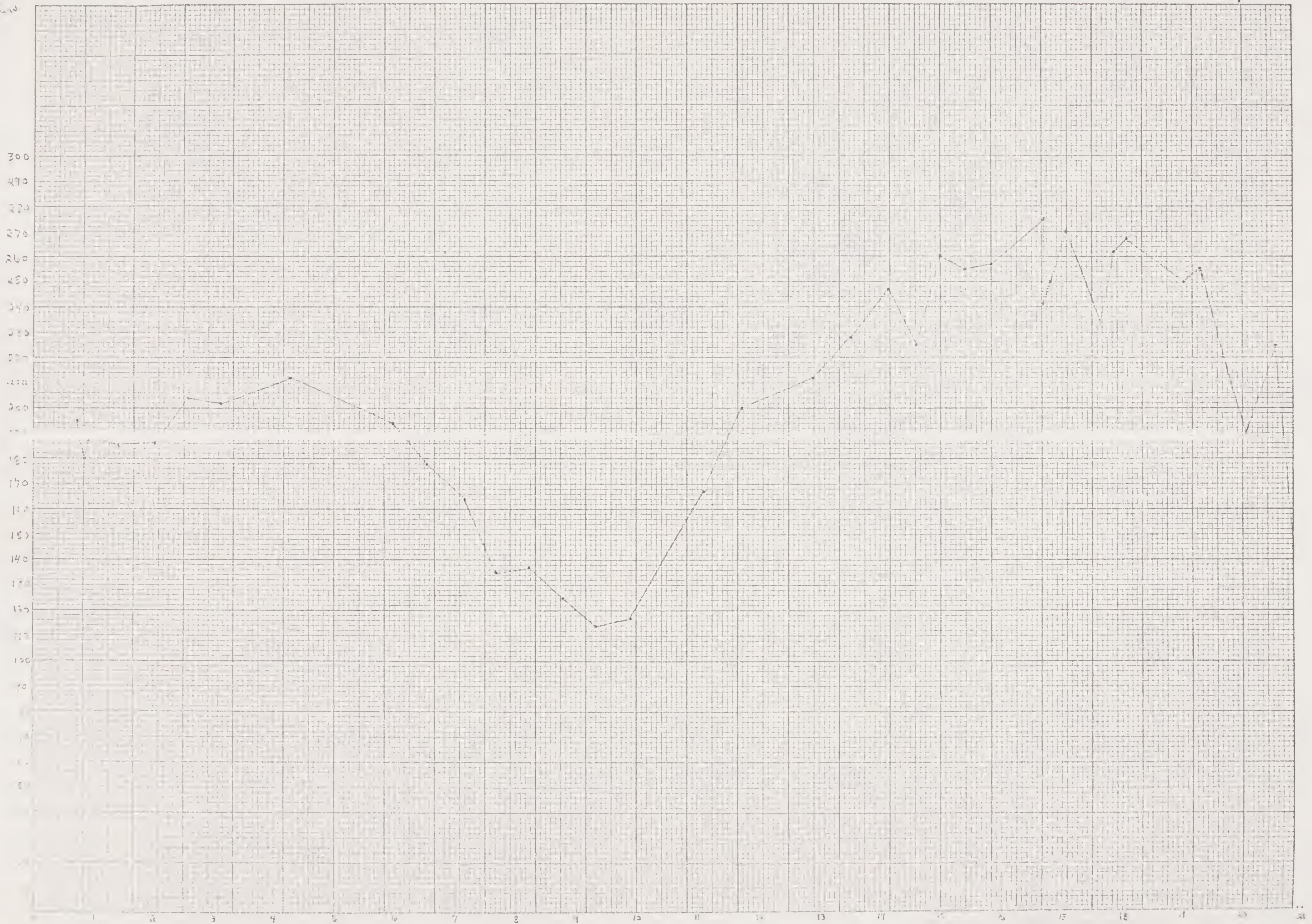
(SIC-15)

Sept. - Oct. 1966

(20° depth)

Sept

msl



Shearwater

Cruise 19

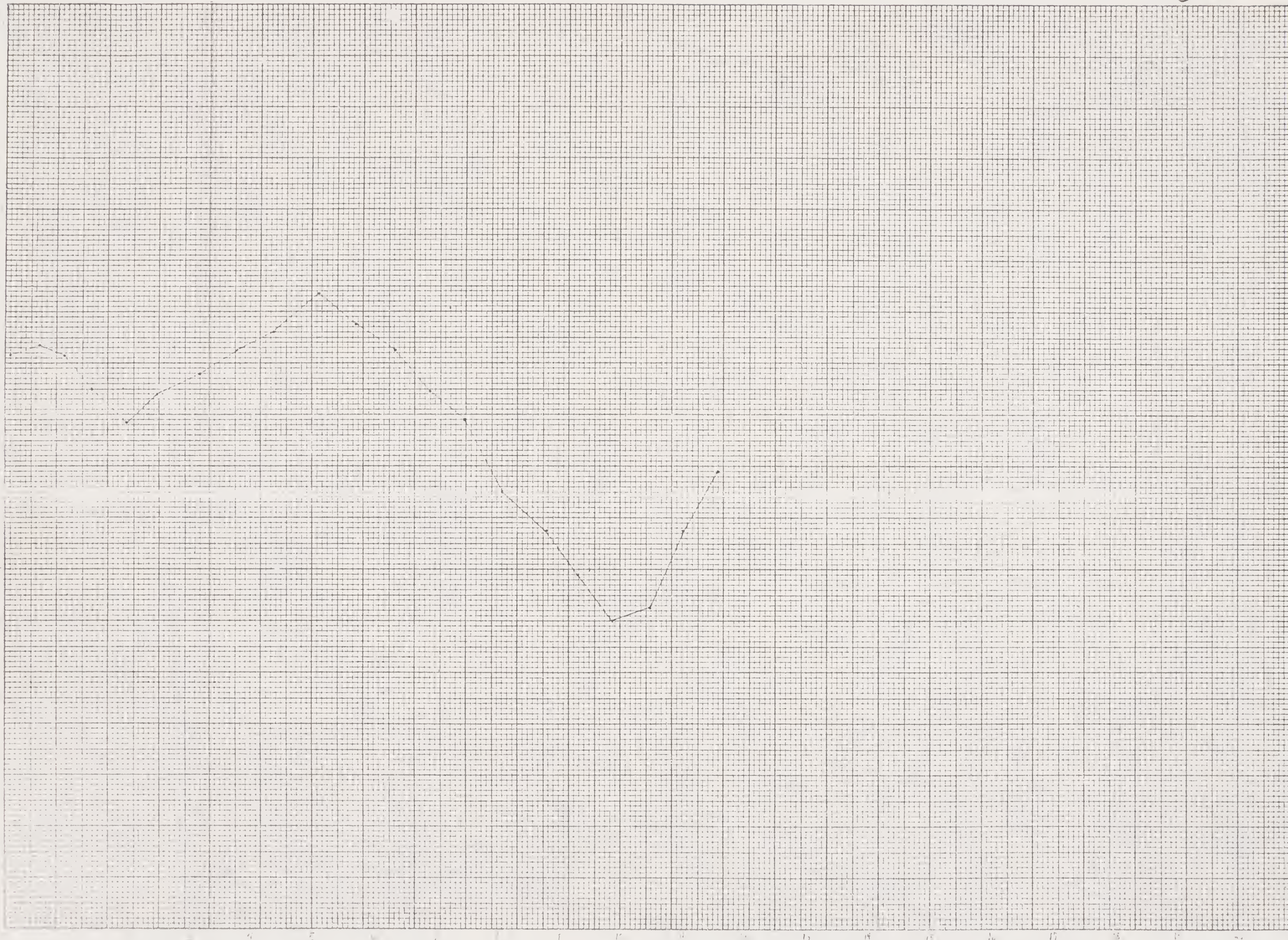
(Lic-15)

Sept. - Oct. 1966

(20° depth)

0° to 110°W

Oct



Shearwater

Cruise 20

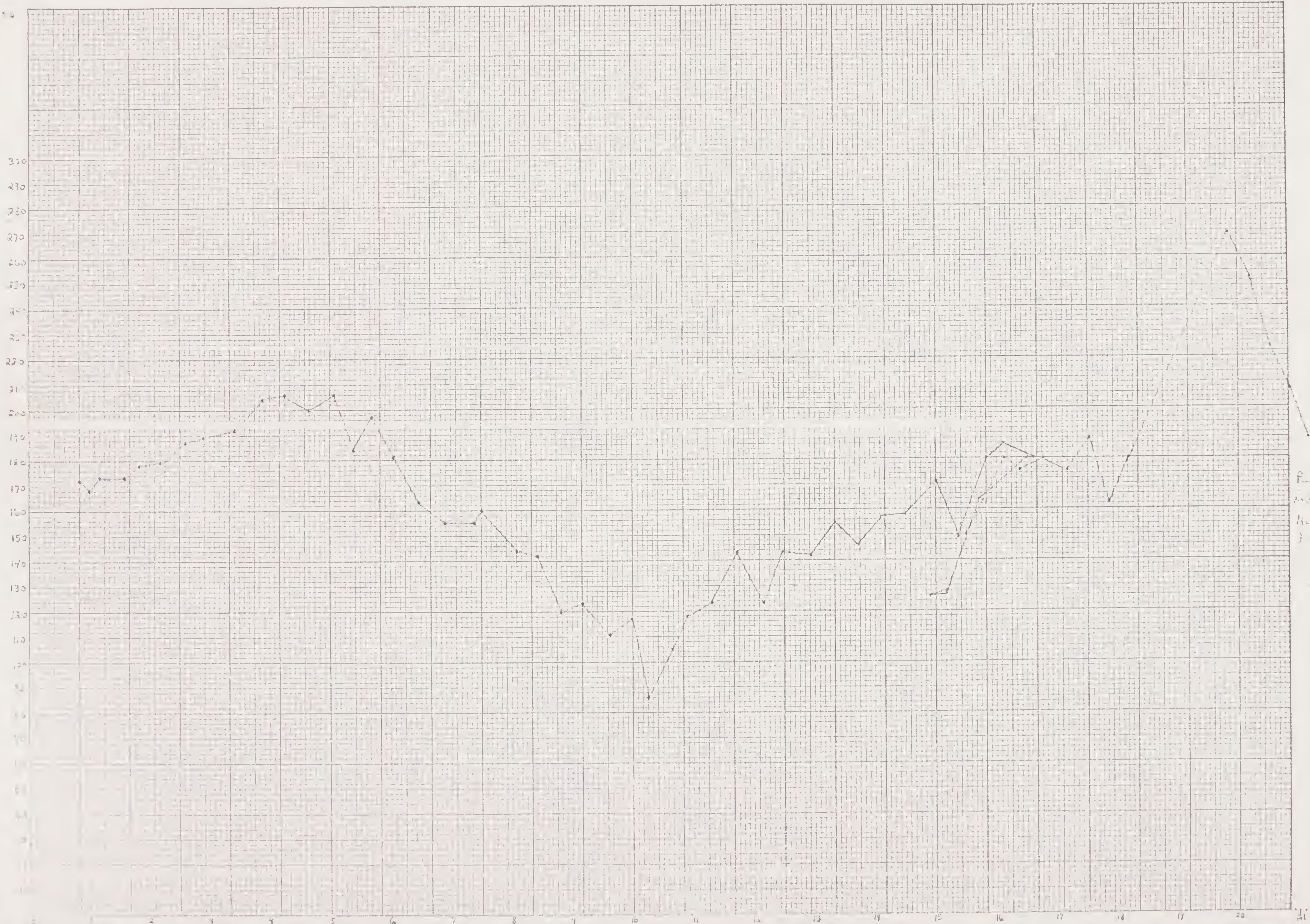
(SIC-16)

Nov. - Dec. 1966

(20° depth)

Nov

met.



RECEIVED
NOV 20 1966

Shawata

Cruise 20

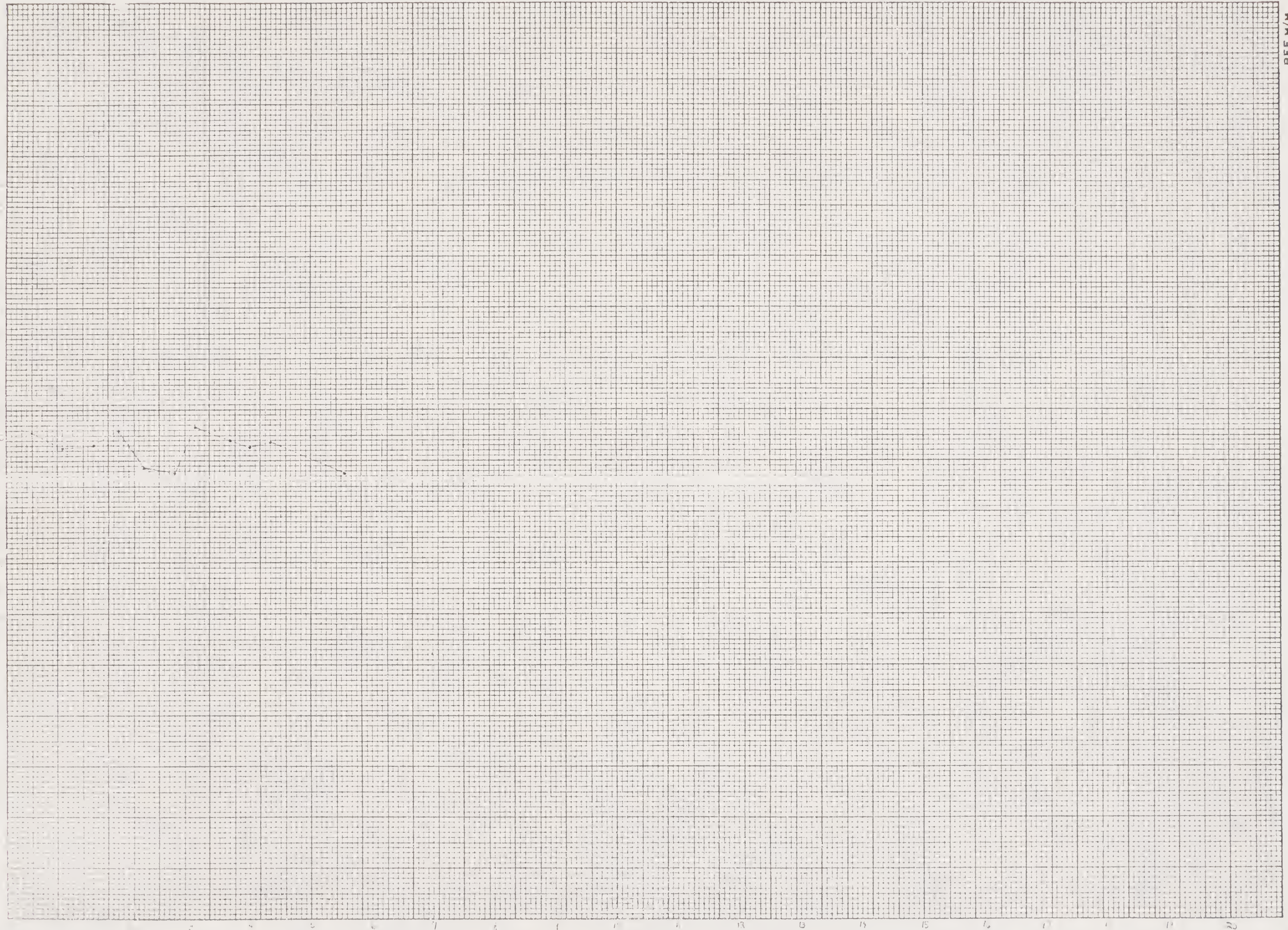
(Sic-16)

Nov. - Dec. 1966

(20° depth)

0° to 90°

Dec

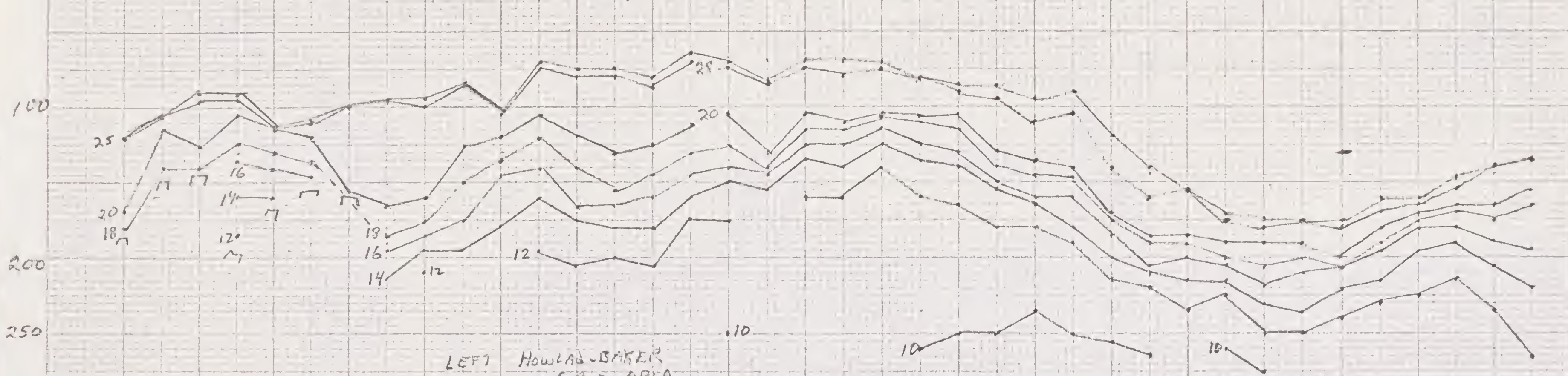


BEE M/M

BFE 20x20 TO INCH

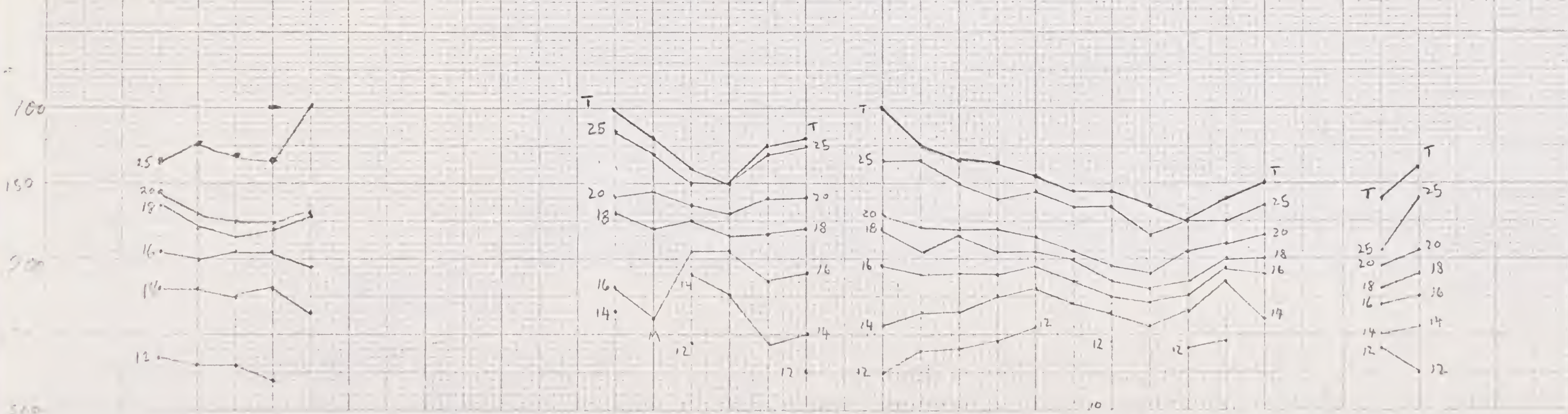
1967

Day	10	JANUARY				11			12	11°N	11°	10°	9°	8°	7°	6°	5°	4°	3°	2°	1°	16	
Hour	12	00				12	00		12	00	12	00	12	00	12	00	12	00	12	00	12	00	12
Slide #	1	2	3	4	5	8	11		14	17	20	23	26	29	32	35	38						
	24.5	25.4	23.5	25.1	25.4	25.2	26.2	26.8	24.8	26.6	27.1	27.3	28.0	28.0	27.4	27.1	27.2	26.5	26.5	26.7			
		24.9	25.4	24.8	25.0	25.5	25.0	26.5	26.0	26.2	27.1	27.0	27.3	28.1	28.0	26.8	27.3	26.5	26.5	26.6			



LEFT HOWLAND-BAKER
SPID AREA

Day	16			17	21			22			25	24	HALL	31			01								
Hour	12	00		12	00	12		00	12		00	12	00	00	12		00								
Slide	38	41				56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
	26.6	26.5	26.5	26.1	26.4	26.0	26.2	26.5	26.4	27.0	26.5	26.4	26.8	27.6	26.8	27.0	27.2	26.9	27.1	27.0	27.1	27.1	27.0	26.6	26.6
		26.3	27.0																						

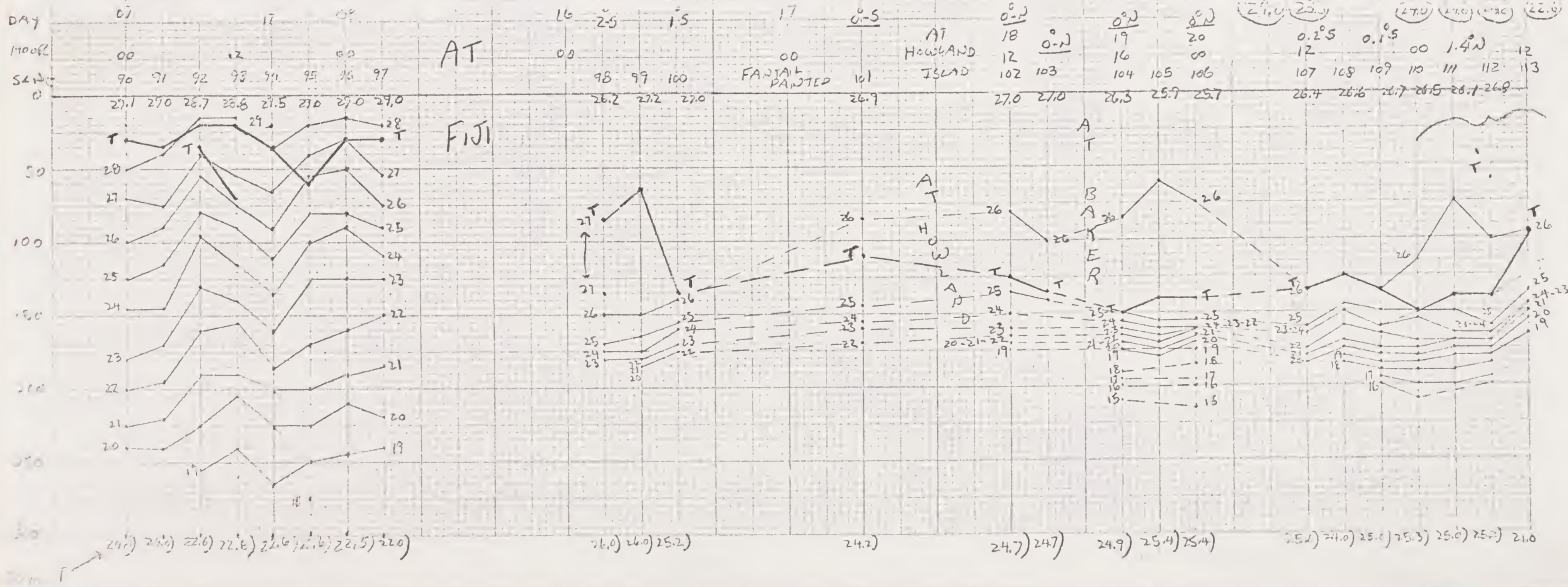
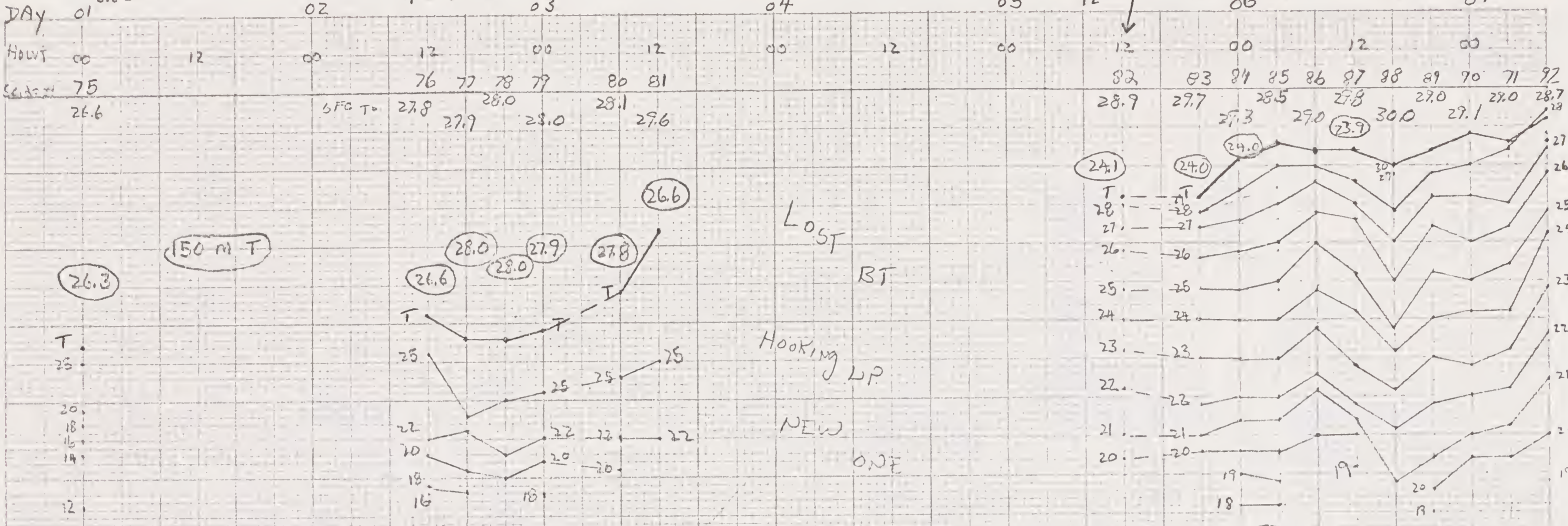


00° 15 00 15 2 3.5

ESTIMATE
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100
125
150
175
200
225
250
275
300

FEBRUARY
3.6°S



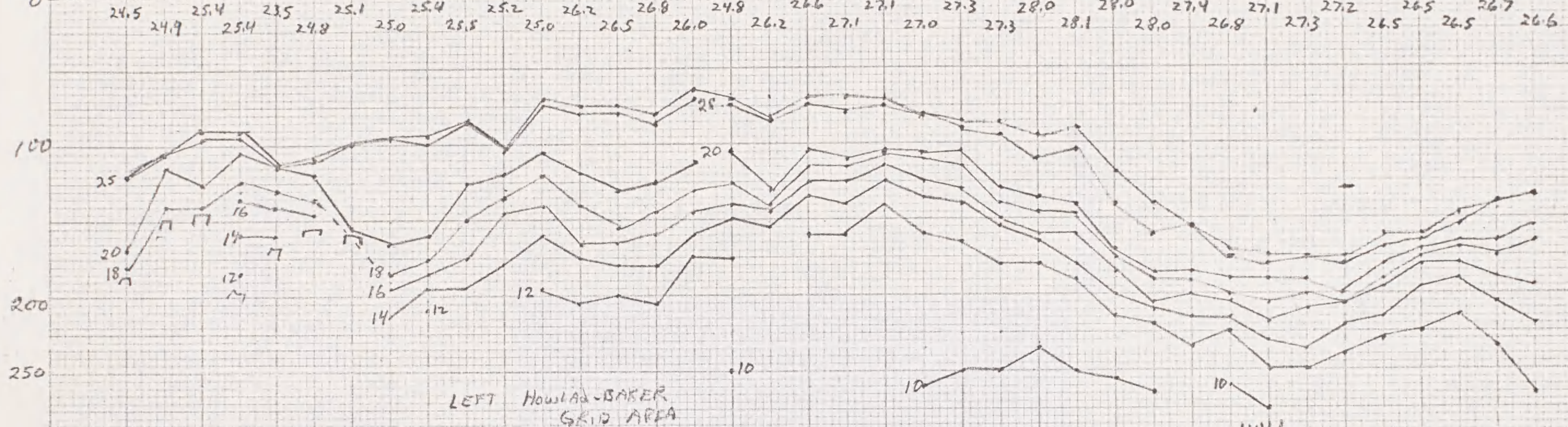
BEE 20x20 TO INCH

1967

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Hour 12 00 12 00 12 00 12 00 12 00 12 00 12

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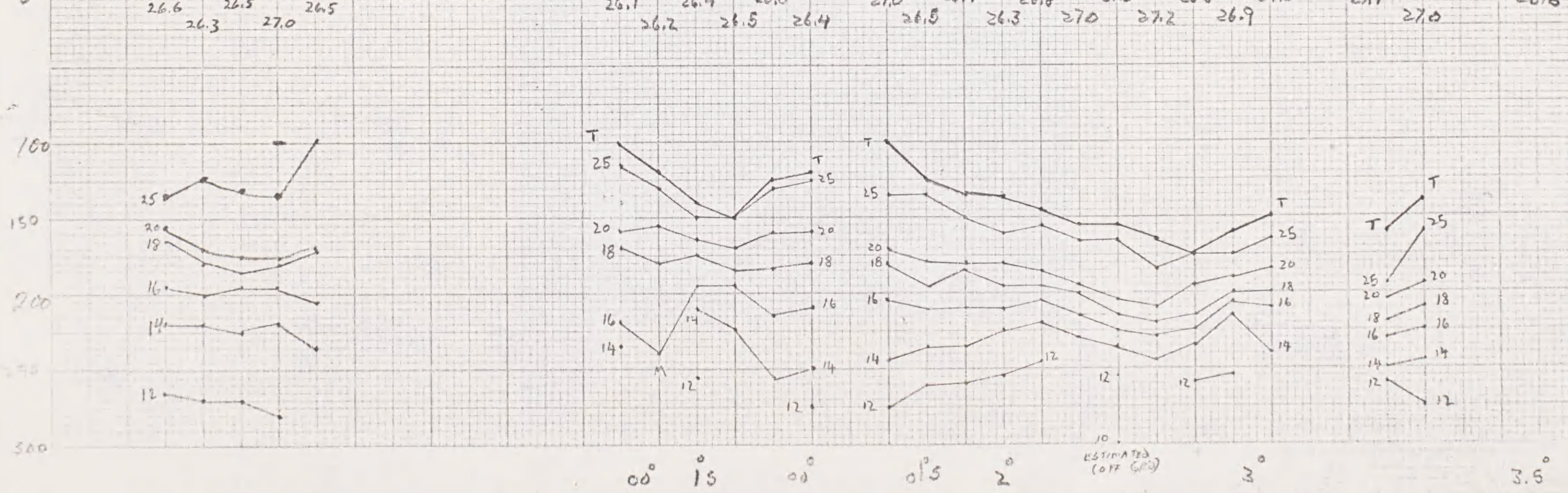


LEFT HOWLAND-BAKER GRID AREA

Day 16 17 21 22 23 24

Hour 12 00 12 00 12 00 12 00 12 00 12 00

slide 38 41 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75

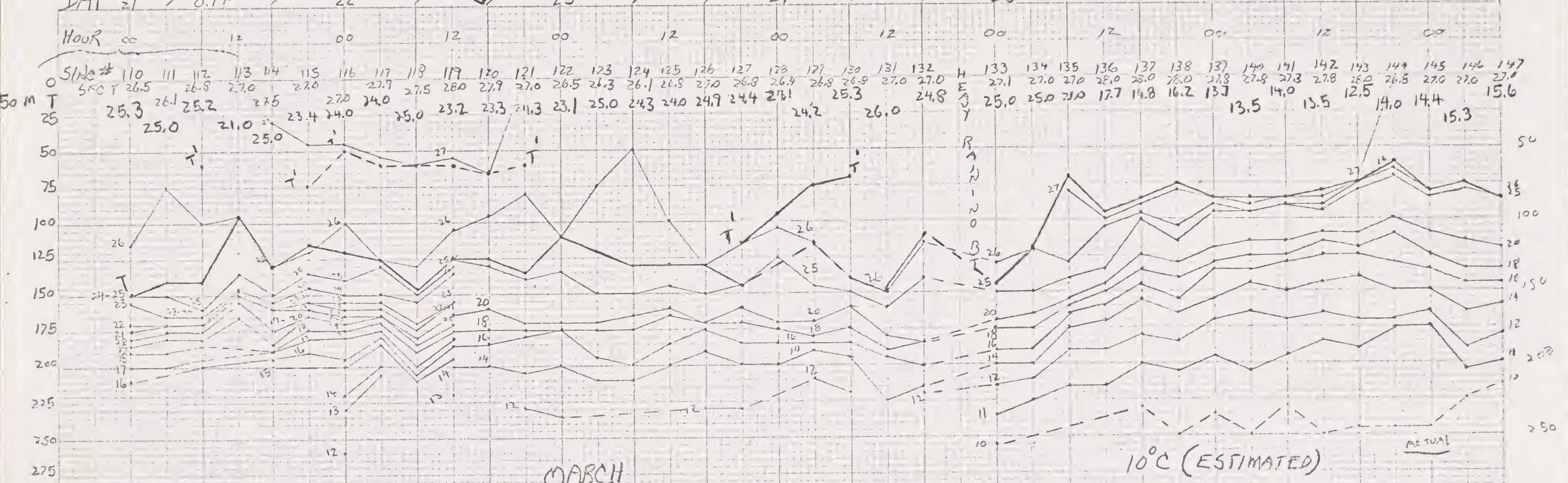


ESTIMATED (OFF GRID)

00° 15 00° 01's 2° 3° 3.5°

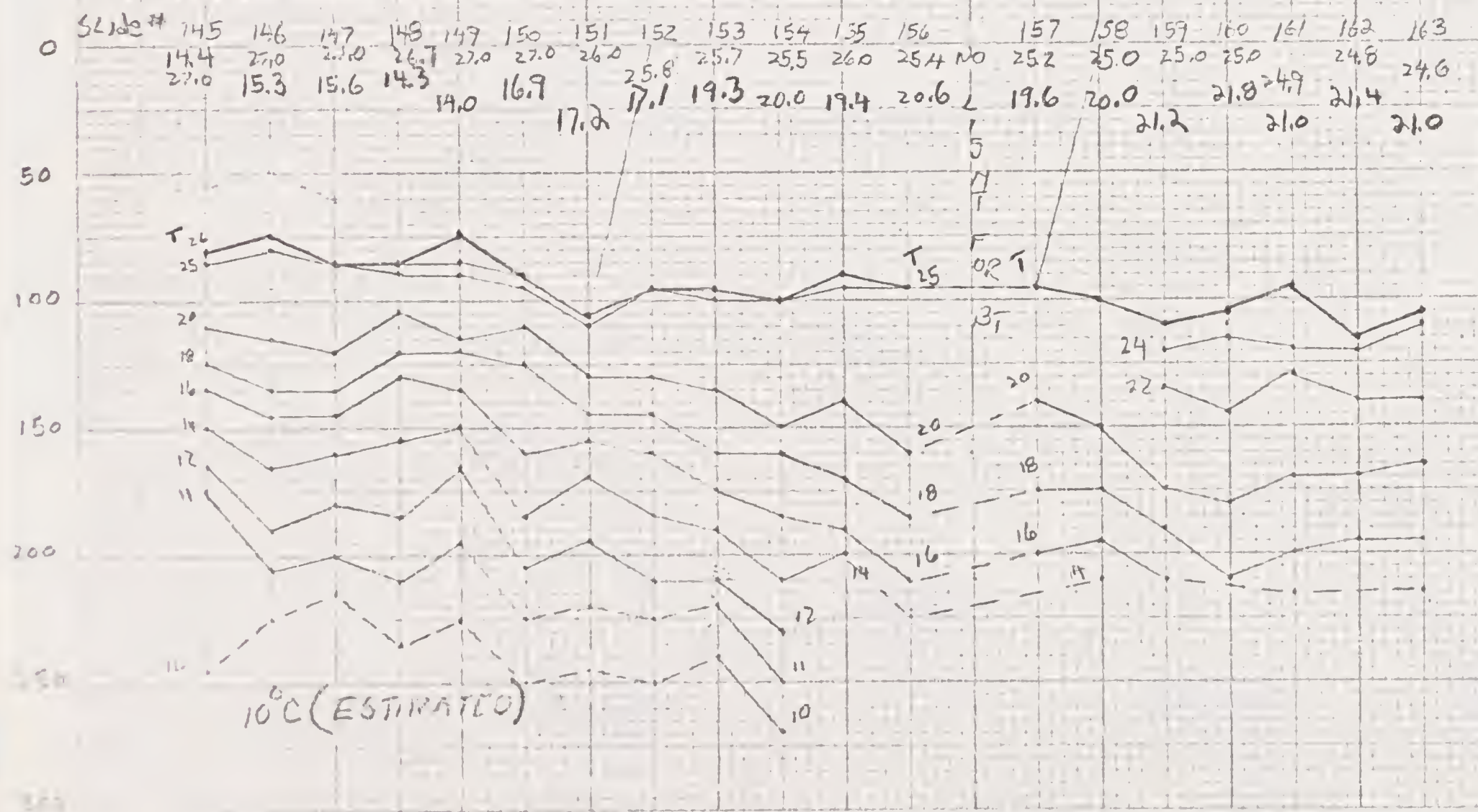
* BEE 20x20 TO INCH

FEBRUARY
DAY 00.15 / 1.4N
21 / 0.7N



MARCH

DAY 27 / 18.0N
Hour 00 / 11.0N
12 / 12.0N
28 / 13.0N
01 / 14.0N
15.0N
02 / 18.0N
03 / 12.0N
04 / 20.0N
12 / 12.0N
00 / 12.0N

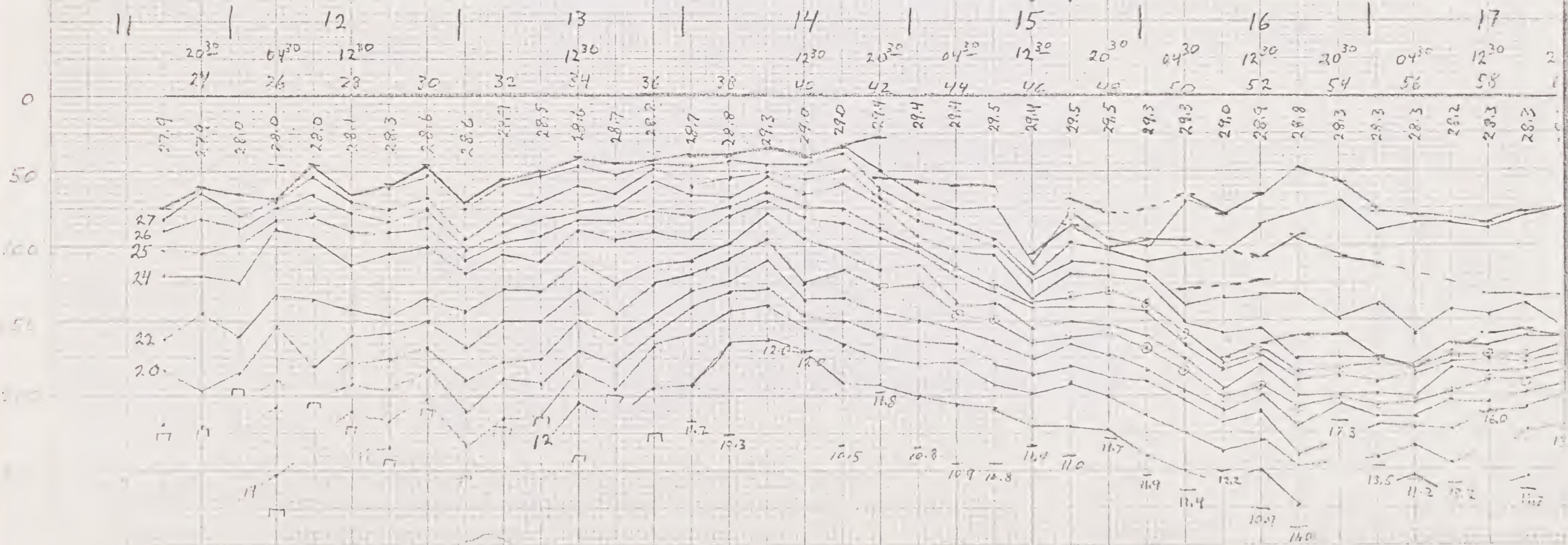
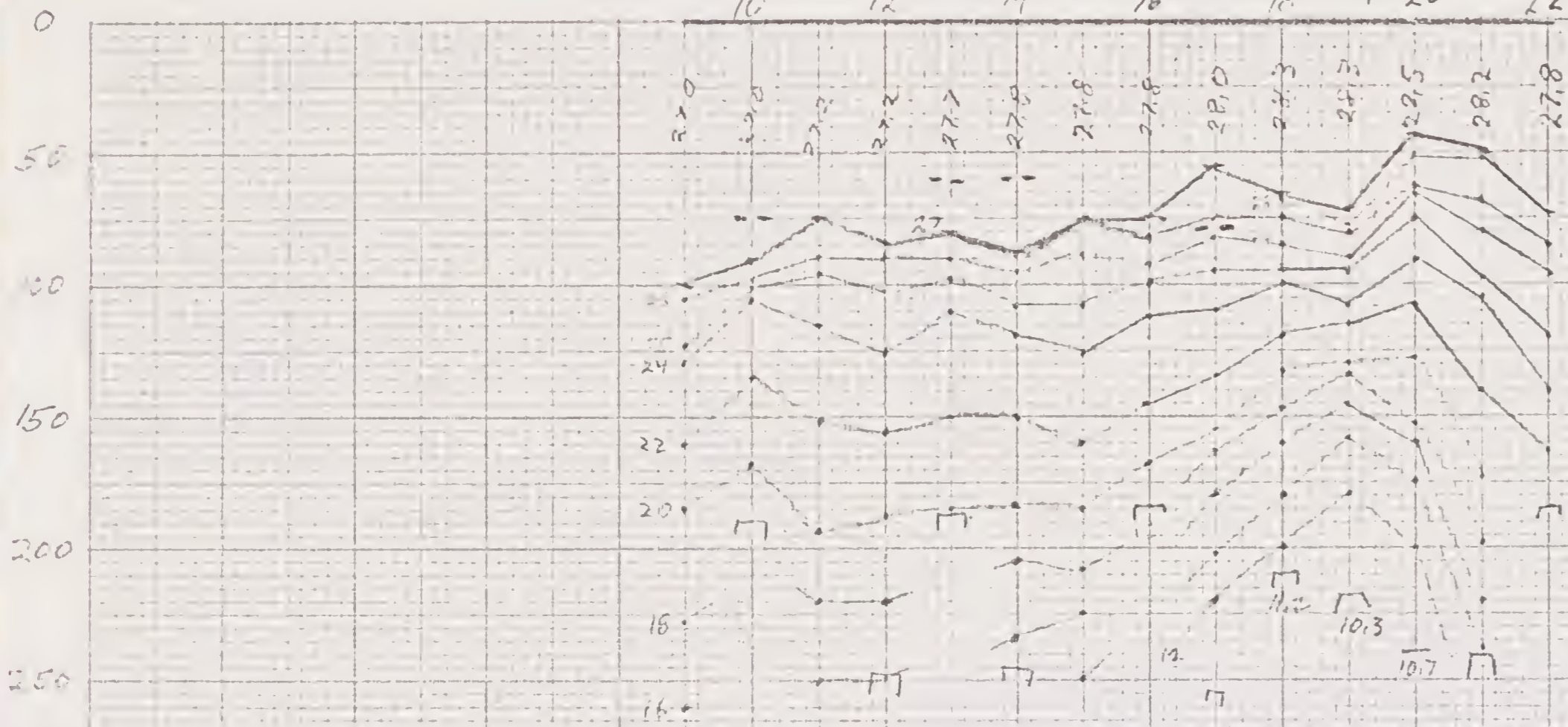


SECURED
BT
DROPS
AS OF
02/0400

* Following Temps now used: 25, 20, 18, 16, 14, 12 & 10. (+ 27 & 26 when available)

November
1966

6 BFE 20x20 TO INCH



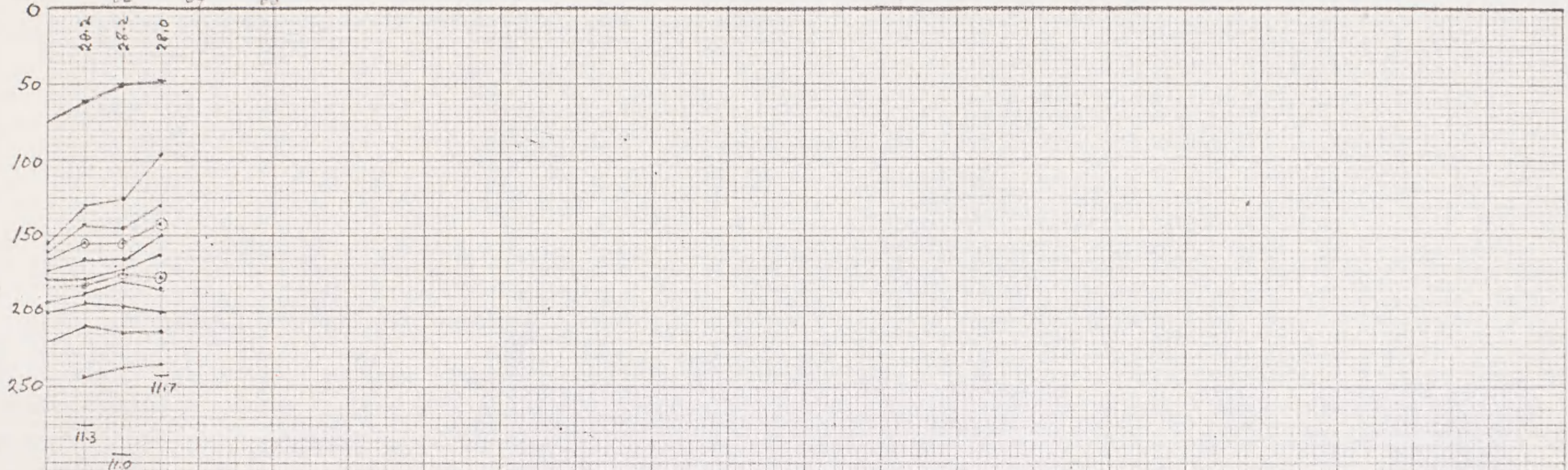
Eastern
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Western
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18

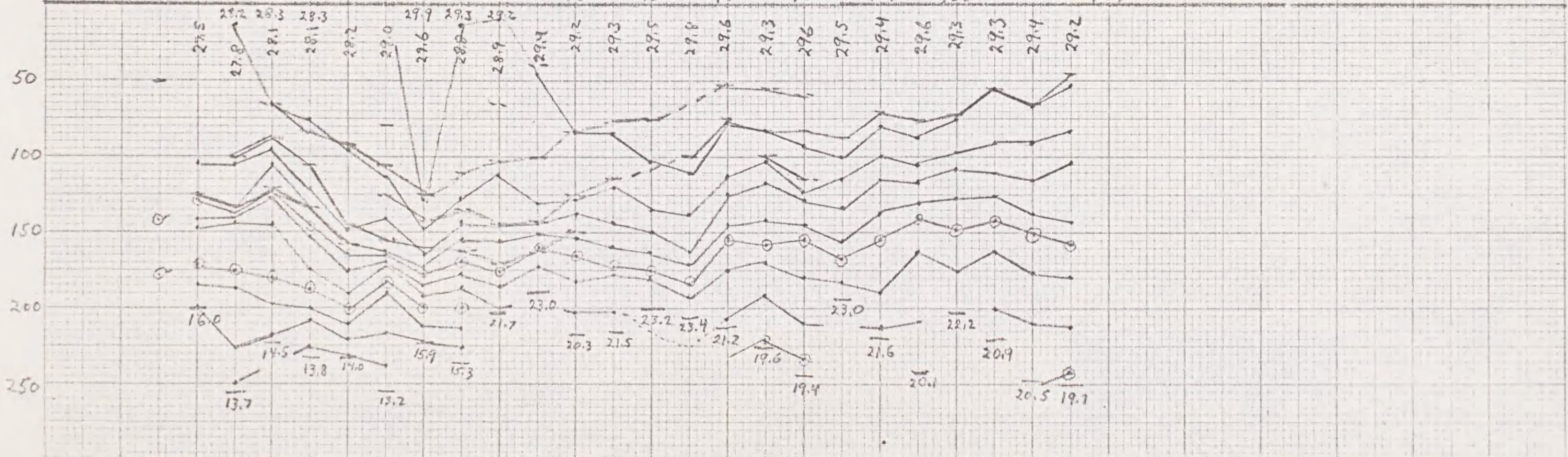
04³⁰ 12³⁰

62 64 66



November 1966

21			22			23			24			25	
12 ³⁰	20 ³⁰	04 ³⁰	12 ³⁰	20 ³⁰	04 ³⁰	12 ³⁰	20 ³⁰	04 ³⁰	12 ³⁰	20 ³⁰	04 ³⁰	12 ³⁰	
83	85	87	89	91	93	95	97	99	101	103	105	107	



slight westerly set ———> ↑ No set

DATE 24 JAN 1966

Time at sunrise = ¹⁰¹⁷ Position at sunrise = HONO
Time at sunset = 1823 Position at sunset = 20-34N, 158-05W
Miles traveled from 0000 hours to sunrise =
Miles traveled from sunrise to sunset = 41
Miles traveled from sunset to 2400 hours = 61.0 mi

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	1600	LORAN & RADAR	158-03W 21-00N	21-00N
2.	1830	" "	158-12W	20-38N
3.				
4.				
5.				
6.				

DATE 25 JAN 1966

Time at sunrise = 0613 Position at sunrise = 18-45N 159-29W
Time at sunset = 1736 Position at sunset = 17-03N 160-37W
Miles traveled from 0000 hours to sunrise = 71 mi
Miles traveled from sunrise to sunset = 120
Miles traveled from sunset to 2400 hours = 67

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	0600	LORAN & CELL-	159-28W	18-47N
2.	0730	" "	159-37W	18-34N
3.	1200	" "	160-04W	17-52N
4.	1800	" "	160-40W	16-54N
5.				
6.				

DATE 26 JAN

Time at sunrise = 0617 Position at sunrise = 15-08N, 161-52W

Time at sunset = 1750 Position at sunset = 13-28N 163-00W

Miles traveled from 0000 hours to sunrise = 69.0

Miles traveled from sunrise to sunset = 120

Miles traveled from sunset to 2400 hours = 65-Mi

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	0600	CELESTIAL	161-51W	15-10.5N
2.	1200	"	162-23W	14-18 N
3.	1800	"	163-01W	13-26N
4.				
5.				
6.				

DATE 27 JAN

Time at sunrise = 0622 Position at sunrise = 11-36N 164-12W

Time at sunset = 1806 Position at sunset = 10-08N 165-20W

Miles traveled from 0000 hours to sunrise = 68

Miles traveled from sunrise to sunset = 124

Miles traveled from sunset to 2400 hours = 62

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	0612	LORAN	164-11W	11-38 N
2.	1200	CELESTIAL	164-39W	10-42 N
3.	1600	LORAN & "	165-01W	10-05 N
4.	1900	CELESTIAL	165-28W	10-13 N
5.				
6.				

DATE 28 JAN

Time at sunrise = 0634 Position at sunrise = 11-13N 167-14W

Time at sunset = 1814 Position at sunset = 12-01N 168-15W

Miles traveled from 0000 hours to sunrise = 67.5

Miles traveled from sunrise to sunset = 93

Miles traveled from sunset to 2400 hours = 64

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	0600	CELESTIAL	167-10W	11-10N
2.	1200	LORAN # 11	168-07W	11-38N
3.	1500	LORAN # 11	168-24W	11-42N
4.	1900	CELESTIAL	168-14W	12-05N
5.	2300	LORAN	168-32W	12-21N
6.				

DATE 29 JAN

Time at sunrise = 0644 Position at sunrise = 12-23N 170-08W

Time at sunset = 1828 Position at sunset = 13-24N 171-31W

Miles traveled from 0000 hours to sunrise = 81

Miles traveled from sunrise to sunset = 120

Miles traveled from sunset to 2400 hours = 63

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	0600	CELESTIAL	169-59W	12-23N
2.	0925	LORAN # 11	170-30W	12-28
3.	1100	" "	170-33W	12-44
4.	1200	" "	170-40W	12-50N
5.	1900	CELESTIAL	171-45W	13-28N
6.				

DATE

30 JAN

wrong time
0647 more likely

Time at sunrise = 0659 Position at sunrise = 14-48N 172-24W

Time at sunset = 1821 Position at sunset = 15-49N 171-03W

Miles traveled from 0000 hours to sunrise = 65

Miles traveled from sunrise to sunset = 99

Miles traveled from sunset to 2400 hours = 51

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.	0700	CELESTIAL	172-24W	14-48N
2.	1100	"	172-01W	15-04N
3.	1900	"	170-57W	15-53N
4.				
5.				
6.				

DATE

31 JAN

Time at sunrise = 0649 Position at sunrise = JOHNSTON IS.

Time at sunset = 1815 Position at sunset = 16-21N 189-41W

Miles traveled from 0000 hours to sunrise = —

Miles traveled from sunrise to sunset = — 22 mi.

Miles traveled from sunset to 2400 hours = 60.5

	TIME OF FIX	TYPE OF FIX	LONGITUDE	LATITUDE
1.				
2.				
3.				
4.				
5.				
6.				

A
PRELIMINARY AT-SEA SURVEY

REPORT

SIC ELEVEN

by

Richard S. Crossin

SIC 11 PRELIMINARY REPORT AT-SEA SURVEY
24 January to 19 March 1966

NON-GRID ONLY

This report covers the observations and collections made at-sea by POBSP personnel on the Southern Island Cruise # 11 during the period 24 January through 19 March 1966. During this period 341.6 hours of diurnal observations and 3,271 miles were covered. A total of 7,796 birds of 36 species were recorded and 101 birds representing 20 species were collected (Tables 1 & 3). Periodic nocturnal observations amounting to 79.2 hours and covering 820 miles were completed throughout the cruise (Table 1). A total of 534 birds were recorded during nocturnal observations. Only two birds were collected during nocturnal operations.

The Smithsonian POBSP team consisted of Richard S. Crossin (in charge of at-sea operations), Max C. Thompson (in charge of island operations), Robert DeLong, Brian Harrington, Norman Heryford, Dayle Husted, James Lewis, Frank Smith and Jeff Tordoff. Tordoff returned to Honolulu from Canton Island on 14 February. DeLong returned to Honolulu from Pago Pago, American Samoa on 21 February. The SIC 11 cruise was made aboard the USNS SHEARWATER (T-AG 177). Excellent cooperation and assistance were received from the officers and crew members.

The SIC 11 cruise track (Figure 1) was essentially the same as that followed on SIC 9 during the period 7 September through 5 November 1965. For purposes of comparing the avifauna encountered during the two cruises, the track can be

divided into three sections comparable to that used in the SIC 9 report as follows:

- AREA a. Honolulu to Southern Grid (Howland-Baker) via Johnston Atoll and Smithsonian Grid #1, 24 January-4 February.
- AREA b. Southern Grid to American Samoa and return with island operations throughout the Phoenix group, 12-26 February.
- AREA c. Southern Grid to Oahu via Canton and Christmas Islands, 6-19 March.

	<u>Present Cruise</u>	<u>SIC 9</u>
AREA a. Total Birds	2512	19,542

Bird numbers in all three sections of SIC 11 cruise were essentially the same; but species group representation varied. Terns, however, were the dominant group in all three areas and accounted for 63% of the total in AREA a. The shearwater-petrel group accounted for 21% in the area. During SIC 9 the vast majority of birds were shearwater-petrels, primarily migrating Sooty/Slender-billed Shearwaters (14,361).

During the present cruise, 4 peak days were noted, 1) 25 January, one day south of Oahu, where Sooty Terns were abundant; 2) 31 January, vicinity of Johnston Atoll, Sooty Terns abundant; 3) 3 February, just above 5° North. An abundance of feeding flocks of predominantly Sooty Terns and dark phase Wedge-tailed Shearwaters were encountered throughout the afternoon. Total birds for this day accounted for roughly

37% of the birds in AREA a; 4) 4 February, just north of 2° North. One large feeding flock containing 302 birds was encountered here. The flock consisted primarily of Sooty Terns.

	<u>Present Cruise</u>	<u>SIC 9</u>
AREA b. Total Birds	2801	9059

Terns were again the dominant species group throughout AREA b and accounted for 83% of the total birds. Common Noddy Terns, however, were the dominant species and were nearly twice as abundant as Sooty Terns. The majority of the Common Noddies were accounted for north of the Tokelau Islands and north of Samoa. Sooty Terns were abundant through the Phoenix group. Shearwater-petrels (almost exclusively dark phase Wedge-tailed Shearwaters) were very low in number throughout the area, accounting for less than 5% of total birds.

	<u>Present Cruise</u>	<u>SIC 9</u>
AREA c. Total Birds	2483	6009

Sooty Terns were the dominant species each day throughout AREA c and accounted for 54% of total birds. Wedge-tailed Shearwaters, predominantly dark phase, were abundant north of Christmas Island. White-rumped storm petrels were common from the Grid to Christmas Island, but only a few scattered sightings were recorded from Christmas to Oahu. Blue-faced and Red-footed Boobies showed a very similar picture: common to abundant between Canton and Christmas Islands, with no sightings of either species north of Christmas.

SPECIES ACCOUNTS

Laysan Albatross a=2 b=0 c=0

One individual followed the ship for two hours on 25 January south of Oahu. Another was collected near 14°N south of Johnston Atoll.

Black-footed Albatross a=3 b=0 c=2

All sightings occurred near the main Hawaiians, south to 17°N. None were collected.

Wedge-tailed Shearwater a=258 b=91 c=612

Large concentrations of dark phase southern hemisphere birds were noted from 2-5°N, north of the Southern Grid and just north of Christmas Island. This was the most abundant procellariid, accounting for over 70% of the total shearwater-petrels.

Sooty/Slender-billed Shearwater a=0 b=0 c=2

The two sightings occurred between Christmas Island and Oahu. These apparently represent early spring migrants moving to northern areas.

Newell's Shearwater a=6 b=0 c=0

All six birds were recorded between 5 and 6°N. From the distribution in the past, this area appears unusually far south and there is a possibility that some race other than Puffinus puffinus newelli from the Hawaiian Islands is concerned. One specimen was collected, but subspecific identification has not yet been made.

Christmas Island Shearwater a=25 b=1 c=15

Practically all sightings in AREA a were recorded on 3 February between 5 and 6°N. Large mixed feeding flocks of

terns and shearwaters were recorded in this area. Most of the sightings in AREA c were just north of Christmas Island. The majority of sightings during September-October 65 were in these two areas.

Audubon's Shearwater a=2 b=8 c=6

Most sightings occurred throughout the Phoenix group where the species breeds. Some concentrations were noted near Canton Island where numbers were noted during the September-October 1965 cruise. Two were seen in the large mixed feeding congregations between 5 and 6°N. One specimen was collected.

Pale-footed Shearwater a=0 b=0 c=1

The single bird was sighted in a large mixed (tern-shearwater) feeding flock north of Christmas Island on 15 March. This species has always been recorded in very low numbers.

Kermadec Petrel a=25 b=0 c=1

Practically all sightings were between 10 and 13°N. During the September-October 1965 cruise, fewer birds were noted, but distribution was more wide spread, especially to the south.

Phoenix Island/Tahitian Petrel a=4 b=2 c=29

Practically all sightings were in the vicinity of Christmas Island where large numbers of Phoenix Island Petrels breed. Thus the vast majority of birds are likely referable to this species rather than Tahitian Petrel. It is doubtful whether these two species can ever be satisfactorily separated in the field.

White-necked Petrel a=6 b=0 c=0

Juan Fernandez Petrel a=52 b=0 c=6

The majority of birds of both races were encountered between 10 and 12°N. These concentrations are likely subadult birds not participating during the present breeding season. Two specimens of Juan Fernandez Petrels were collected.

Black-winged Petrel a=2 b=0 c=0

The two sightings occurred north of 5°N where large concentrations were recorded during September 1965. This race of the Bonin Island Petrel is presently concentrated on the breeding grounds in the Kermadec Islands.

Gould's (White-winged Petrel) Petrel a=0 b=2 c=0

Two birds were recorded south of the equator. Larger numbers of presumably wintering birds were recorded from Samoa to 5°N during the September-October 1965 cruise.

Mottled Petrel a=0 b=0 c=1

The single sighting occurred south of Oahu on 18 March and likely represents an early migrant ~~at~~ the northern "wintering" area. Large numbers were migrating south to the breeding grounds during October 1965.

Dark-rumped Petrel a=3 b=0 c=0

The three birds were south of Johnston Atoll on 27-28 January. Most sightings of this species are near the Hawaiian Island breeding areas.

Bulwer's Petrel a=15 b=11 c=18

Most birds were recorded north and east of the Howland-Baker area. Those recorded in early March appeared to be

migrating to the east; likely headed toward breeding grounds in the Phoenix and/or Line Islands.

White-throated Storm Petrel a=1 b=7 c=1

Most sightings were near McKean Island in the Phoenix group where the species breeds. Birds of various color phases ranging from normal to pure melanistic were noted.

Leach's Storm Petrel a=6 b=2 c=11

Harcourt's Storm Petrel a=0 b=1 c=1

Unidentified white-rumped storm petrels a=76 b=101 c=133

The majority of sightings were concentrated in a broad equatorial belt from the Howland-Baker Phoenix group to Christmas Island. This large area is utilized by Leach's Storm Petrels as a wintering ground. Random collecting produced 22 Leach's and 2 Harcourt's Storm Petrels; thus the vast majority of unidentified birds are likely referable to Leach's. Numbers of white-rumped storm petrels were just beginning to build up in this area during October 1965.

Red-tailed Tropicbird a=12 b=0 c=9

Scattered sightings were recorded in AREA's a and c. Surprisingly, none were recorded in AREA b, between the Southern Grid and Samoa. Numbers were considerably higher during September-October 1965 with concentrations south of Oahu and near Christmas Island. Five specimens were collected during the present cruise.

White-tailed Tropicbird a=23 b=21 c=1

Scattered sightings were recorded throughout AREA's a and b. Some concentrations were noted south of the main

Hawaiians and north of Samoa. Both areas serve as breeding grounds. Five specimens were collected.

Blue-faced Booby a=13 b=36 c=26

Birds were noted through out the entire cruise, with expected higher numbers near islands, especially throughout the Phoenix group. During the September-October 1965 cruise, a large number (400) was recorded just south of Enderbury Island. Three specimens were collected during the present cruise, all of them banded (see Table 5).

Brown Booby a=40 b=33 c=0

Practically all sightings were in the immediate vicinity of islands; Oahu, Johnston Atoll and the Phoenix Islands. Approximately equal numbers were recorded during SIC 9.

Red-footed Booby a=113 b=68 c=66

Concentrations accounting for the majority of birds were noted near islands: just south of Oahu, Johnston Atoll, north of Samoa and north of Christmas Island. Six specimens were collected. One, banded at French Frigate Shoals, was taken on 30 January SW of Johnston Atoll approximately 523 miles distant.

Greater Frigatebird a=19 b=5 c=1

Most sightings occurred between Johnston Atoll and 10°N. A few were noted south of the Phoenix Islands. One specimen was collected. A total of 47 unidentified frigatebirds were noted.

Lesser Frigatebird a=2 b=9 c=2

All sightings in AREA b were recorded one day north of Samoa. Two birds were noted just north of the Howland-Baker grid area and two were seen just north of Christmas Island. Two specimens were collected. An unknown percentage of the 47 unidentified frigatebirds are likely referable to this species.

Shorebirds a=0 b=10 c=12

The 10 birds (7 Ruddy Turnstones, 3 Golden Plovers) recorded in AREA b were sightings throughout the Phoenix Islands. One Golden Plover was collected. The 12 sightings in AREA c occurred south of Oahu on 18 and 19 March. These were in all probability Red Phalaropes, but there remains the possibility of confusing this species with Sanderlings.

Pomarine Jaeger a=70 b=0 c=1

All 70 birds recorded in AREA a were seen just south of the Honolulu harbour. This area serves as a wintering ground for the species. Four specimens were collected. Five unidentified jaegers, probably of this species, were also recorded.

Sooty Terns a=1558 b=673 c=1368

This species accounted for over 46% of total birds throughout the entire At-Sea area. Heavy concentrations in mixed feeding flocks occurred just above 5°N and north of Christmas Island. Sooty Terns were the dominant species in AREA's a and c. A total of 22 birds was collected.

Gray-backed Tern a=2 b=98 c=16

Practically all sightings occurred throughout the Phoenix Islands. One specimen was collected.

Common Noddy Tern a=5 b=1033 c=21

The vast majority of sightings occurred between Samoa and Swain's Island. Both areas support large breeding colonies.

White-capped (Hawaiian) Noddy a=0 b=9 c=0

Blue-gray Noddy a=0 b=9 c=6

Scattered sightings of these species were recorded through the Phoenix group where both breed. The Blue-gray Noddies recorded in AREA c were in close proximity to Christmas Island.

Fairy Tern a=17 b=389 c=59

A few scattered sightings occurred throughout the At-Sea area, but large concentrations were noted between Samoa and Swain's Island. Both these areas support large breeding populations. Birds noted at any distance from land were often in mixed tern-shearwater/petrel feeding flocks.

TABLE I. Summary of SIC 11 Non-Grid pelagic observations, 24 January-20 March 1966.

a. Oahu to Southern Grid Area via Johnston Atoll, 24 January-4 February.

<u>DIURNAL</u>				
<u>Date</u>	<u>No. Miles</u>	<u>No. Hours</u>	<u>No. Birds</u>	<u>No. Species</u>
24 January	41	8.1	158	6
25	120	11.4	230	8
26	120	11.6	91	10
27	124	11.7	134	12
28	93	11.7	57	10
29	120	11.7	24	8
30	99	11.4	19	5
31	22	2.8	358	6
1 February	127	11.6	25	7
2	126	11.8	122	8
3	98	11.9	927	14
4	83	11.9	367	13
TOTALS	1173	127.6	2512	26 (8.9/day)

<u>NOCTURNAL</u>				
25 January	2	0.2	2	2
26	13	0.3	3	2
26-27	133	12.3	140	5
27-28	130	11.5	17	5
28-29	145	12.5	64	5
29-30	128	12.5	34	4
30-31	101	12.5	149	5
31 Jan.-1 Feb.	130	12.5	101	4
1-2 Feb.	34	3.5	3	2
3	9	0.9	2	1
TOTALS	815	78.7	515	13 (3.5/night)

TABLE I Cont.

b. Southern Grid Area to Samoa and return via Phoenix Islands,
12-26 February 1966.

<u>Date</u>	<u>DIURNAL</u>			
	<u>No. Miles</u>	<u>No. Hours</u>	<u>No. Birds</u>	<u>No. Species</u>
12 February	108	12.0	329	8
13	60	5.6	203	11
14	44	6.0	189	11
16	136	11.5	155	12
17	122	12.3	434	11
18	76	7.5	61	8
23	68	6.6	904	10
24	84	8.2	225	6
25	131	12.4	90	10
26	<u>134</u>	<u>12.3</u>	<u>211</u>	<u>14</u>
TOTALS	963	94.4	2801	23 (10.1/day)

<u>NOCTURNAL</u>				
14 February	3	0.3	17	1

Table 1. (continued).

c. Southern Grid to Oahu via Canton and Christmas Islands,
6-19 March 1966.

DIURNAL

Date	No. Miles	No. Hours	No. Birds	No. Species
6 March	101	12.1	230	11
7	106	12.0	120	9
8	101	11.0	64	7
9	108	12.0	89	8
10	97	12.0	181	11
15	134	12.1	1210	15
16	121	12.1	459	9
17	116	12.1	41	6
18	131	12.1	44	6
19	<u>120</u>	<u>12.1</u>	<u>45</u>	<u>9</u>
TOTALS	1135	119.6	2483	28(9.1/day)
GRAND TOTAL (Diurnal)	3271	341.6	7796	35

NOCTURNAL

7 March	2	0.2	2	1
GRAND TOTAL (Nocturnal)	820	79.2	534	13
GRAND TOTAL (Diurnal and Nocturnal)	4091	420.8	8330	35

Table 2. Diurnal density of species groups (non-Grid SIC 11),
24 January to 19 March 1966.

Species Group	No. Birds	Birds/Sq. Mi.	%Total Birds
Shearwater/Petrel	1369	.209	17.56
Storm Petrel	340	.104	4.36
Terns	5370	.547	68.88
Tropicbirds	69	.010	.89
Boobies	409	.062	5.25
Frigatebirds	85	.006	1.09
Shorebirds	22	.007	.28
Miscellaneous	<u>132</u>	<u>.020</u>	<u>1.69</u>
TOTALS	7796	1.192	100.00

Table 3. Diurnal abundance of species at-sea SIC 11, 24 January-
19 March 1966.

Species	No. Birds	Birds/ Linear Mi.	No. Coll.	Status Over Sept.-Oct.
Laysan Albatross	2	.0006	1	+
Black-footed Albatross	5	.001	-	+
Wedge-tailed Shearwater	961	.293	17	-
Sooty/Slender-billed Shearwater	2	.0006	-	-
Newell's Shearwater	6	.001	1	-
Christmas Island Shearwater	41	.012	-	+
Audubon's Shearwater	16	.004	1	-
Pale-footed Shearwater	1	.0003	-	-
Kermadec Petrel	26	.007	-	+
Phoenix Island/Tahitian Petrel	35	.010	-	-
White-necked Petrel	6	.001	-	-
Juan Fernandez Petrel	58	.011	2	-
<u>Pterodroma externa</u> (Unidentified to race) 3	3	.0009	-	-
Black-winged Petrel	2	.0006	-	-
<u>Pterodroma hypoleuca</u> (Unidentified to race) 3	3	.0009	-	-
Gould's (White-winged) Petrel	2	.0006	-	-
Mottled Petrel	1	.0006	-	-
Dark-rumped Petrel	3	.0009	-	+
Bulwer's Petrel	44	.013	3	-
Unidentified Shearwater/Petrel	159	.048	-	-
White-throated Storm Petrel	9	.002	-	+
Leach's Storm Petrel	19	.005	22	+
Harcourt's Storm Petrel	2	.0006	2	0

Table 3. (continued)

Species	No. Birds	Birds/ Linear Mi.	No. Coll.	Status Over Sept.-Oct.
Unidentified Storm Petrels	310	.091	-	+
Red-tailed Tropicbird	21	.006	5	-
White-tailed Tropicbird	45	.013	5	-
Blue-faced Booby	75	.022	3	-
Brown Booby	73	.022	-	-
Red-footed Booby	247	.072	6	-
Greater Frigatebird	25	.073	1	-
Lesser Frigatebird	13	.003	2	-
Frigatebird species	47	.014	-	-
Golden Plover	3	.0009	1	-
Red Phalarope/Sanderling	12	.003	-	+
Ruddy Turnstone	7	.002	-	-
Pomarine Jaeger	71	.021	4	+
Sooty Tern	3599	1.100	22	-
Gray-backed Tern	116	.035	1	-
Common Noddy Tern	1059	.323	-	+
White-capped(Hawaiian) Noddy	9	.002	-	-
Blue-gray Noddy Tern	15	.004	1	-
White (Fairy)Tern	465	.142	1	-
Tern species	107	.032	-	-
Miscellaneous Unidentified	<u>71</u>	<u>.021</u>	<u>-</u>	-
TOTALS	7796	2.38	101	

TABLE 4. Nocturnal abundance of species At-Sea SIC 11, January to March 1966.

<u>Species</u>	<u>No. Birds</u>	<u>Birds/ Linear Mile</u>	<u>No. Collected</u>
Black-footed Albatross	1	0.001	-
Kermadec Petrel	2	0.002	-
Juan Fernandez Petrel	1	0.001	-
Unidentified Shearwater-Petrel	3	0.004	-
Storm Petrel species	2	0.002	-
Red-tailed Tropicbird	1	0.001	-
Tropicbird species	3	0.004	-
Blue-faced Booby	5	0.006	-
Brown Booby	12	0.015	-
Red-footed Booby	18	0.022	2
Booby species	8	0.010	-
Great Frigatebird	1	0.001	-
Shorebird species	1	0.001	-
Sooty Tern	447	0.545	-
Gray-backed Tern	1	0.001	-
Fairy Tern	1	0.001	-
Tern species	17	0.021	-
Miscellaneous unidentified	<u>10</u>	<u>0.012</u>	<u>-</u>
TOTALS	534	0.651	2

TABLE 5. SIC 11 At-Sea banded and/or color-tagged birds observed or collected, January to March 1966.

<u>Species</u>	<u>Date</u>	<u>Band or Tag</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Miles from Origin</u>
Blue-faced Booby Ad.	4 Feb.	568-71369	02-09 N	176-13 W	85 Howland
Blue-faced Booby S-Ad.	26 Feb.	568-71167	04-13 S	174-23 W	38 McKean
Blue-faced Booby S-Ad.	26 Feb.	568-72131	04-08 S	174-25 W	212 Phoenix
Red-footed Booby Imm.	30 Jan.	767-43036	16-12 N	170-22 W	523 Fr. Frig. S.
Sooty Tern Ad.	31 Jan.	Orange Streamer	16-25 N	169-40 W	23 Johnston

TABLE 6. Blood samples from SIC 11 At-Sea collected birds, January-March 1966.

<u>Species</u>	<u>No. of Samples</u>
Laysan Albatross	1
Newell's Shearwater	1
Wedge-tailed Shearwater	6
Juan Fernandez Petrel	2
Bulwer's Petrel	2
Leach's Storm Petrel	5
Harcourt's Storm Petrel	1
Red-tailed Tropicbird	5
White-tailed Tropicbird	5
Blue-faced Booby	6
Red-footed Booby	7
Greater Frigatebird	1
Lesser Frigatebird	1
Pomarine Jaeger	4
Sooty Tern	<u>11</u>
TOTAL	58

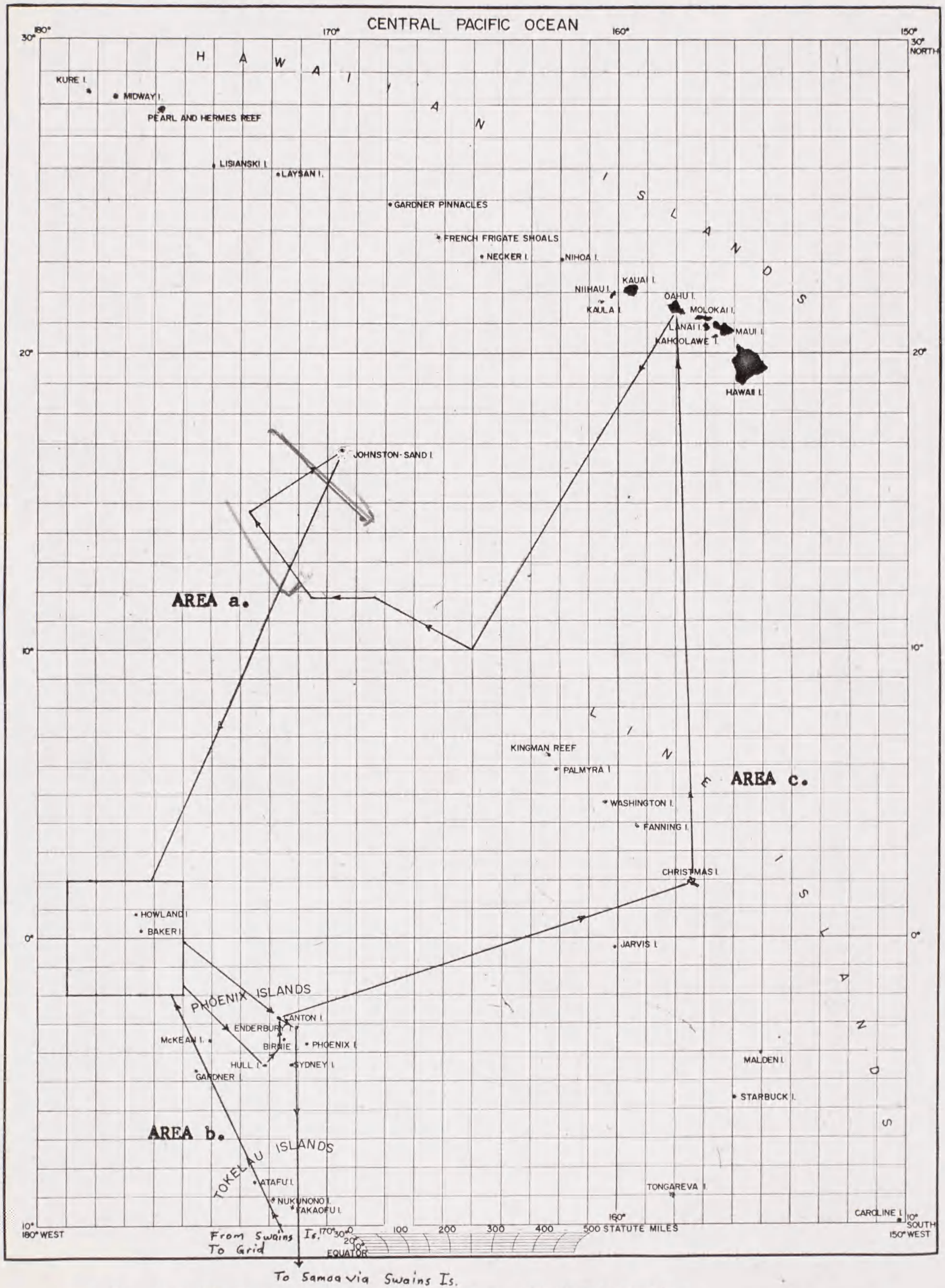


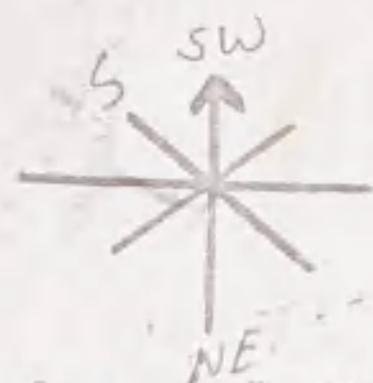
Fig. 1. SIC 11 Cruise Track, 24 January- 19 March 1966.

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7-28-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

1st day - SIC 11

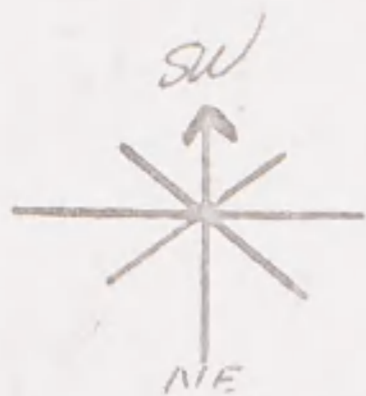
DATE 24 Jan 66
Pg. # 1



time	species	#	dir.	hgt.	remarks	loc.
1015					Begin observations Leave Honolulu	
1016	Booby sp?	1				
1018	Birds	3				
1020	Porpoise				Porpoise - 18	
1020	Brown Booby	1			feeding over school of porpoise	
1023	" "	1			flying with B.B. (1020)	
1025	Jaeger sp.	3			2 sitting on water.	
TF 1030	Pomarine Jaeger	5			sitting on H ₂ O.	
1035					ship now circling.	
FF 1045	RF Booby	8			FF, fish jumping	
	Brown Booby	4				
1050					ship still circling	
1105	Brown Booby	1			on log	
1107	Brown Booby	2			feeding	
1125	Booby sp.	2				
1208					jaegers and boobies scattered,	
1230					alternately feeding, flying, sitting	
					6 Brown and 6 Red-footed Boobies sitting on H ₂ O, ship still stationary	
1245	leave harbour					
1400	Pomarine Jaeger	1	NE		8 Brown, 6 Red-foot, several Pomarine Jaeger (light phase, rest dark-intermediate) sitting in group, Red-foots spread out, Browns in loose group but staying together jaegers sitting together, several other jaegers scattered about, flying and sitting	
1437					Total count: 6 adult Red-foot 1 imm. " "	
1505	Black-foot Albatross	1	following ship		8 adults Brown	
1505	Pomarine Jaeger	1	"	landed on H ₂ O	1 lt. phase Pom. Jaeger	
1507	"	2	landed on H ₂ O		7+1 dark or intermed. phase Pom. Jaeger	
1530	"	2	NE	light phase		
1600	Pomarine Jaeger	1	S	light phase		
1605	Black-foot Albatross	2			following ship (undoubtedly one from 1505)	
1615	Jan F Petrel	1	0			
1615	Pomarine Jaeger	5	SW		dark phase, & light phase - strung out, not in a flock	
1615	R-F Booby	1	0			
1628	Pomarine Jaeger	1	on H ₂ O			
1650					Total of 10 Pomarine Jaeger (2 coll-RSC)	
1707	Sooty T.	1	NE		adult,	

1015
1023
8

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SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG — E

DATE 24 Jan 1966
Pg. # 2

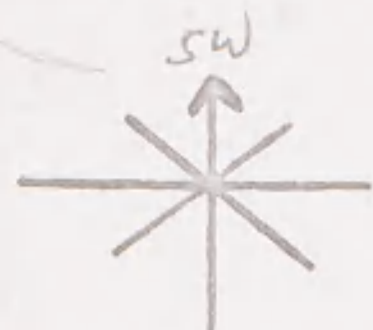
	time	species	#	dir.	hgt.	remarks	loc.
	1710	Bird	3	N			
FF	1713	Sooty Tern	26	E		Travelling	
		Pom. Jaeg.	35				
	1715	Black-foot albatross	2	⊙		same	
LCC	1735	Pom. Jaeger	3			2 coll. Thompson + Smith	when a bird is shot down all others swirl around above it.
		" "	11				
FF	1750	" "	11	SE		few dark phase, rest light	
TF	1810	" "	7			landed on H ₂ O, ^{then} arching ship	
	1814	Red-foot Booby	1	⊙		imm. tried to land on ship	
	1822	Pom. Jaeger				same ones as above following ship	
	1822	Bl-foot Albatross	2			still same ones following ship	
	1823					sunset - cease observations	

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SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

2nd day SIC II

DATE 25 January 1966
Pg. # 1



time	species	#	dir.	hgt.	remarks	loc.
0600					Begin Observations	
0603	Bl-foot Albatross	1			Following ship - molt in upper wing coverts	
0609	Red-foot Booby	1	S-SW		ad.	
0613					SUNRISE	
0622	R F Booby	1	SW		immature	
0626	Bird	1			ad's	
0630	Sooty Tern	2	S			
0703	Bl-foot Albatross	1			same	
0703	sooty tern	2	N-NW		ad's.	
0710	wedge-tail	1	S-SW		light phase	
0730	Sooty Tern	2	W		ad's	
0732	Sooty Tern	1	NW		ad	
0733	"	4	NW		ad	
0741	"	1	NW		ad	
0742	"	3	NW		ad.	
0741	"	2	NE		Ad.	
0755	Bird	3				
0758	Sooty Tern	1	NW		ad	
0800	"	1	NW		Ad	
0803	BK-ft. Albatross	1			same	
"	Sooty Tern	4	NW		Ad.	
0810	" "	1	NW		ad	
0811	" "	1	NW		ad	
0812	" "	1	NW		ad	
0813	Bird	2	NW			
0814	sooty Tern	4	NW		ad	
0815	Laysan Albat.	1			Following ship.	
0823	Sooty Tern	1	NW		ad	
0828	" "	3	NW		ad.	
0827	" "	1	NW		ad.	
0838	" "	1	SE		ad	
0850					Rain squall to S.E.	
0900	sooty Tern	1	NW		ad	
0901	WTTB	1			circling ship	
0903	BK-ft. Albatross	1			same	
"	Sooty Tern	2	NW		Ad.	
0910	" "	2	NW			
0917	Leach's type	1	W		white rump, black	
0918	Laysan albat	1			same as 0815	
0920					ship entering squall (see 0850.)	
0940	RF Booby	1			Following ship; imm; molt in secondaries.	
FF 0955	Sooty Tern	40			} adult. Flock (not actively feeding) joined by imm of 0940	
	RF Booby	1				
1002	RF Booby	2				
1003	Sooty Tern	2	NW		imm following ship.	

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SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- EDATE 25 Jan 66
Pg. # 2

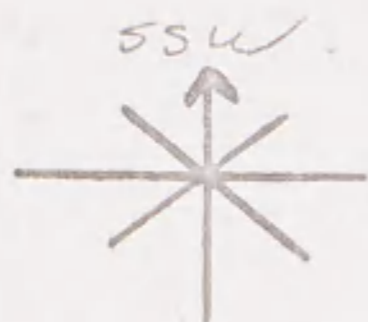
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1011	R. F. Booby	1	NE		imm	
1017	Sooty Tern	1	N			
1021	Large in All	1	⊙		Probably the same one.	
1035	Sooty Tern	1	SE			
1042	Sooty Tern	2	↖↗N		Ad	
1045	Sooty Tern	3	↖↗W		Ad	
1145	" "	2	"		Ad	
1305	WTTB	1	⊙			
1343	Sooty Terns	2	SW		Ad	
1355	Red ST B. Faced Albat	1	SSW		same	
1402	Shear-Petrel	2	⊙			
1456	Sooty tern	1	N			
1505	Storm Petrel	1	⊙		rings not seen	
1529	Sooty Tern	1	NE			
1548	W-T tropic bird	1	N			
FF 1553	Sooty Tern	100+	}		all in one flock	
FF 1554	Fairy tern	6				
1554	Tropic bird sp.	2				
1550	whale					
1555	Black-ft. Albatross	1			Whale - 1 blow only	
1615	Fairy tern	1	S		same down in H ₂ O once, then continued on course	
1625	R-f. Booby	1	N		Immature or Subadult	
1700	B F Albatross	1			SAME	
1703	R-f. Booby	1	⊙		Adult white	
1710	" "	1	⊙		" "	
1736					SUNSET - green flash!	

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SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

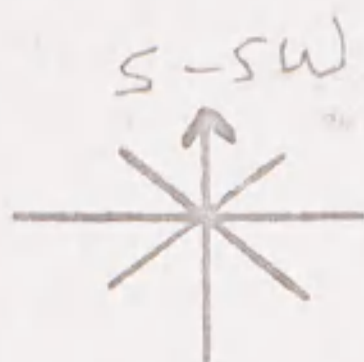
SIC 11
3rd Pay

DATE 26 Jan 1966
Pg. # 1



time	species	#	dir.	hgt.	remarks	loc.
0600					Begin observation	
0601	Blue-face Boob	1	NW		adult	
0613	Sooty Tern	2	NW		adults	
0617					SUNRISE	
0617	Red-tail tropicb.	1			adult; hovered over ship, then flew NE	
0647	Fairy Tern	1	SE			
0656	Sooty Terns	2	NW		adults	
0722	R.F. Booby	1			immature following ship	
0725	Leach's type SP.	1	W		All black w/ white rump	
0730	WTTB	2	⊙			
0820	WTTB	1	⊙			
0910	Sooty Tern	2	NW			
0930	R-F Booby	2	⊙		feeding, adult	
0930	Brown Booby	1	⊙		" "	
0930	Sooty tern	1	⊙		circling Boobies	
0950	R-F Booby	1	N		Adult traveling	
1102	shear/petrel	1	NE			
TF 1110	Sooty Terns	30	NE		} one flock	
	Gr. Frigatebird	1	NE			
	X-mas Is Shear	1	NE			
1113						
1137	WTTB	1	⊙			
1147	G. Frigate	1	⊙			
1205	Wh.t. Tropicbird	1	⊙			
1215	"	2	NE		Adult	
TF "	Sooty Tern	8	SE			
1305	R.F. Booby	1	N		Adult	
1314	Wh.t. Tropicbird	1	SE		Adult	
1339	wedge-tail Shear.	1	NW		light phase	
TF 1403	Sooty Terns	8			scattered, were not observed feeding	
1405					Rain squall to south.	
1417	R.F. Booby	1	SW		adult	
1425	shear/petrel	1	NW			
1425					Rain squall to N. (different from above)	
1435	Bird	1			on horizon - mostly or all white	
1438	WTTB	1			adult	
1440	Sooty Tern	1				
1442	R.F. Booby	1	W		adult	
1449	R.F. Booby	1	W		imm.	
1453	Booby sp	1			ad	
1515	Red-foot Booby	1	SW			
1520	WTTB	1	⊙		ad.	
1532	Bird	1	⊙			
1553	Sooty Tern	2				
	G. Frigate	1			Ad ♀	
1606	G. Frigatebird	1	NE		Ad ♂	
1714	Leach's type SP	1	SE		adult	
1728	RTTB	1	⊙			
1735	Whale				whale 007007	
1745	Shear-Pet.	1	⊙			
1750					SUNSET cease Diurnal obs.	

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SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

DATE 26²⁷ January 1966
Pg. # 15

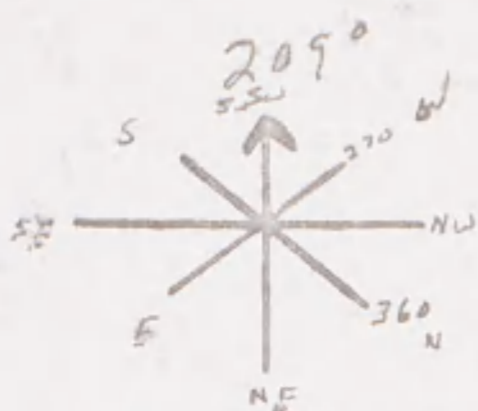
Nocturnal Obs.

time	species	#	dir.	hgt.	remarks	loc.
1750					sunset - Begin Obs.	
2035	sooty tern	2+	W		only heard, apparently quite high.	
2040	" "	1	W		heard, quite high	
2050	" "	1	⊙			
2055	" "	1	N-NE		came low over ship. ad.	
2112	" "	1	⊙			
2118	" "	2	NW			
2123	" "	2	W			
2132	" "	2+			heard in the East, seemed to be travelling NW	
2136	" "	3	NW			
2142	" "	2	⊙			
2145	" "	4+	⊙		at least 3 took off NW-NE	
2149	Tropicbird sp	1	SW		heard one call to E.	
2152	Grey backed Tern?	1				
2156	Sooty Tern	2	N			
2200	" "	3+			heard calling off to west.	
2204	" "	5+			circling ship, 2+ headed NW	
2209	" "	1	⊙			
2210	" "	2	N			
2214	" "	1	SE			
2216	" "	1	⊙			
2219	Tropicbird	1	⊙			
2220	Sooty Tern	2	W			
2224	" "	3			calling off to W, sound like they were going NE	
2228	" "	1	NE			
2232	" "	2	⊙			
2240	" "	1	SW			
2242	" "	2			calling off to SW, heading N	
2245	" "	1	W			
2250	" "	1	NE			
2253	" "	1	⊙			
2258	" "	2	SW			
2307	" "	1	E			
2311	" "	1	NW			
2317	" "	1	E			
2345	" "	1	NE			
0009	" "	2	NE		calling and flying low 25' over Hull	
0015	Storm Petrel	1	⊙		around lights	
0018	Sooty Tern	2	W		flying high above ship - calling	
0022	" "	1	?		Rough	
0026	" "	2	W		fair flight & calling	
0029	" "	1	⊙		came into ship called once - circling	

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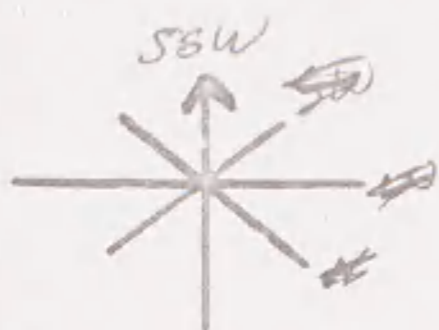
SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

DATE 26-27 January 1965
Pg. # 2



time	species	#	dir.	hgt.	remarks	loc.
0036	Sooty tern	1	?		called over - Not very loud	
0045	" "	1	NE			
0050	" "	1	E			
0053	" "	1	E			
0056	" "	1	⊙			
0100	" "	1	?			
0110	" "	2	?			
0120	" "	1	NW			
0125	" "	1	?			
0135	" "	1	⊙		circled ship & calling	
0142	" "	1	NE			
0155	" "	2	?			
0202	" "	1	?			
0208	" "	1	?			
0210	" "	1	⊙			
0225	" "	2	NW			
0233	Noody sp	2	N			
0235	Sooty tern	1	N			
0250	" "	104	N		may have been up to 15 birds. Some imm. birds?	
0300	" "	1	NE			
0303	" "	2	?		1 imm.	
0307	" "	10	?			
0315	" "	2	N			
0328	" "	1	⊙			
0330	" "	2	⊙			
0332	" "	1	N			
0336	" "	3	N			
0342	" "	1	⊙			
0344	Bird	1	N		may have been shear-pet	
0346	Sooty Tern	1	⊙			
0352	" "	1	?		calling	
0352	Storm Pet	1			small, dark, fluttery	
0355	Sooty Tern	1	⊙			
0358	" "	2	NE		silent, is raining	
0404	" "	1	⊙		calling	
0410	" "	1	⊙		circled ship, silent, raining	
0412	" "	4+	⊙		heard	
0415	" "	3	⊙		rain has stopped	
0416	" "	2	NE		calling	
0432	" "	1	NE		silent	
0450	" "	2	⊙		calling	
0511	" "	2	NE		seen & heard	
0526	" "	2	⊙		" "	
0550	Rain Squealer	1				
0606	Booby sp.	1	NE		cease next obs.	

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SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

STC 11
4th Day

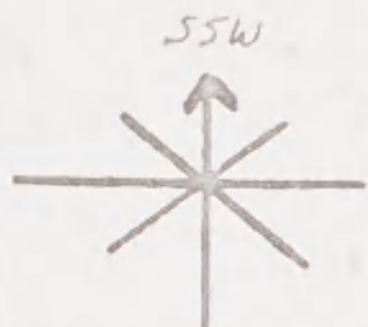
DATE 27 Jan 1966
Pg. # 1

time	species	#	dir.	hgt.	remarks	loc.
0630	Sooty Tern	1	SW		Sun rise	Begin Diurnal Observations
0635	W.T. Shearwater	1	NW		light phase	
0640	Pink-rumped Petrel	2	NE		crissum white clearly not a wedgetail	
0655	wedgetail	1	N-NE		light phase	
0707	" "	1	N-NE		light phase	
0709	shear-Pet	1	⊙		small, dark	
0715					squall passing over ship	
0717	wedgetail	1	NE		light phase	
0728	Phoenix Island Shear-Pet	1	N-NE		prob. Kermadec	
0743	Kermadec Pet.	2	N-NW		light phase	
0745	Kermadec "	1	N-NW		light phase	
0747	Pterodroma sp.	1	WN			
0758	Kermadec P.	1	W		light phase	
0759	Leach's type	1	WN		black w/white rump.	
0805	JFP	1	NW			
T.F. 0822	Sooty Tern	1	NW			
	Fairy Tern	1				
	Shear-pet	5			Flock not observed feeding.	
0825					Rain squalls over eastern horizon	
0832	Kermadec P	1			light phase	
0847	Dark-Rump Petrel	1	NW		well observed	
0853	Kermadec P?	1	NW		dark underwing, brown dorsal side. Whole head and throat white. Size of Kermadec. very faint white flashes in wing.	
0900	Kermadec P	1	NW			
0901	P. externa	1	W			
0922					Rain squall to E	
0935	Brown Booby	1	NW		" " " NW	
0937	JFP	1	SE			
0942	JFP	1	SE			
0945	RTTB	1			coll. BAN	
0957	Blue-face booby	1			ad. sitting on the O.	
1000	Juan F. Petrel	1	W			
	Leach Petrel Type	1			Black & white rump	
1013	Juan F. Type	1	NNE		Dark brown on back, like underwings & black leading edge	
1053	Juan F. Petrel	1	NNE			
"	Pterodroma sp.	1	S			
1100	Juan F. Petrel	1	W			
1107	Kermadec P.?	1	W			
	Juan F. Type	1	W			
1124	J.F. Petrel	1	W			
1132	J.F. Petrel type	6	NE			
1215	J.F. Petrel	2	⊙			
FF 1216	Sooty Terns	30+	SE			
	shear Petrel	62				
1300	Booby	1	NNE		immature, dark face markings, dark across back	
1315	Pterodroma sp.	1	⊙		light belly	
1333	Pterodroma hypoleuca	2	S			

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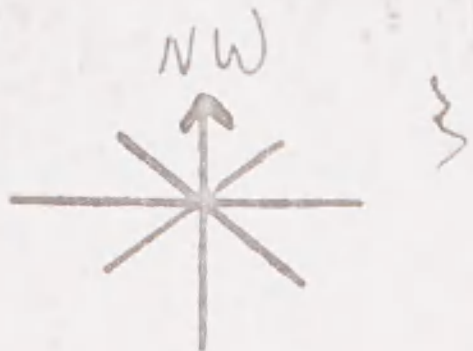
SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

DATE 27 Jan. 1966
Pg. # 2



	time	species	#	dir.	hgt.	remarks	loc.
	1336	J.F. Petrel	2	W			
	1343	Frigate	1	NW			
TF	1350	Sooty Tern	5	SSE			
	1408	Blue-Faced Boob.	1	Ø		sub-adult	
	1410	Storm-Pet	1	SE		white rump	
	1410	Puffin	1	N			
	1422	Fairy Tern	1	NE			
	1425					big squall along port side	
	1430	Pterod.	1	Ø		sm. dk.	
	1431	Shear-Pet	1	Ø		Wedgetail or Dark-Rump	
	1447	Kermadec P	1	N		light phase, dark head	
	1510	wedge-tail	1	NE		Dark phase	
		JFP Type	1	NE			
	1514	JFP	1	NE		Light phase	
	1515	Kermadec P	1	N		whale (Squal also)	
	1518						
	1535	Storm Pet.	1	SE		Didn't get good look	
	1540	Shear-Pet	1	NW		way out, diving	
	1545	Frigate	1				
	1608	Suez Fernandez	1	Ø			
	1608	shear Pet	1	Ø		white belly	
-NW	1630					Change course to NW	
	1653	J.F. Petrel	1	NW			
	1700	J. F. Petrel	1	SE			
	1700	Fairy Tern	1	SE		feeding done twice into 1726	
	1711	Large Pterodroma	1	Ø			
	1727	Juan F. Petrel	1	SE			
	1804	" "	1	SE			
	1805	" "	1	Ø			
	1806					sunset	

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7-28-64



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG — E

Nocturnal

DATE 27-28 January 1966
Pg. # 1

time	species	#	dir.	hgt.	remarks	loc.
1806					sun set - begin Nocturnal observations	
2037	Shear-Pet	1	S			
2110	Bird	1				
2115	Sooty T.	1			first heard to west	
2120	Tern or Tropicbird	1			seen flying about 50' above ship.	
2135	" " "	1			" " "	
0210	Sooty Tern	1			heard calling.	
0215	" "	2	♂			
0245	shorebird	1	♀		flown at ship	
0257	Kermadec Petrel	1	♂		light wing patches clearly seen light phase	
0320	Sooty Tern	2	NE			
0415	Bird	1	♀			
0435	Tern	1	♀			
0445	Sooty Tern	1	♀			
0515	Tropicbird	1	♀			
0525	Sooty Tern	1	NW			
0634	Sunrise				cease observations	

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7-28-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

SFC II
5th Day

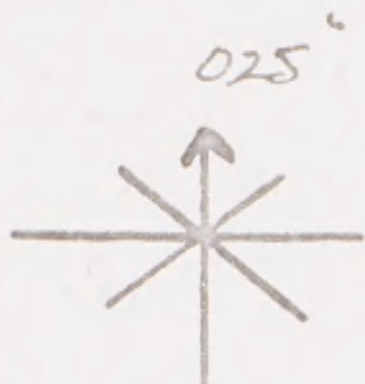
DATE 28 January 1966
Pg. #



time	species	#	dir.	hgt.	remarks	loc.
0634	Shearwater					
0715	Kermadec Petrel	2	⊙		1 dark - 1 light	
0716	J.F. Petrel	1	⊙			
0743	White neck Pet.	1	WS			
0745	Pterodroma sp.	2	WN			
0745	W + B	1	⊙			
0750	J.F. Petrel	2	WN			
0815	JFP	1			following ship.	
0826	storm petrel	1	NNW		white rump, vest black	
0830	pterod. sp.	2	NW			
0901	J.F. Petrel	1	NE			
0916	J.F. Petrel	1	SE			
0923	J.F. Petrel	1	NN		possibly same as above	
x 0930	Dark Rump Pet.	1			x	
1103	Phoenix/Tahiti	1	SE			
1155	J.F. Petrel	1	SE			
1156	Rain Squal					
1204	J.F. Petrel	1	SE			
1204	J.F. Petrel	1	SE			
1212	G. Frigatebird	2	⊙ NE		both immatures, doing some diving, apparently attempting to fish. no other birds about when first sighted. An imm. RFBody came over and joined them.	
1215	Red-foot Booby	1	→			
1217	Kermadec Petrel	2	SW		1 dark phase, 1 light phase.	
1230	Kermadec Petrel	1	NW		dark phase	
FF 1236	WITB	1	E			
1300						
1245					Rain Squal moving to S. over ship	
1315	Sooty Tern	6	⊙		Feeding flock to SW of ship	
1348	Gr. Frigate	1	E			
1349	Wh-necked Petrel	1	E		flying together	
	Tuam F. Petrel	1	E			
1400					Change of heading 34° (N)	
1410	J.F. Petrel	1	NN			
1416	RFB body	1	⊙			
1538	B-F Booby	1	N		imm all dark as to	
1605	Pterodroma sp.	1	N			
1637	Guam F. Petrel	1	N			
FF 1704	" W.N. " Petrel	2	⊙		all moving ahead of ship at least 1 light phase bird	
	Kermadec P.	3	⊙			
	Sooty Tern	2	N			

FF
1300
Change course to W. ship unable to continue NW. in trough.

SI-MNH-958e
7-28-64



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

DATE 28 Jan
Pg. # 2

time	species	#	dir.	hgt.	remarks	loc.
1715	Storm Petrel	1	N		Black = white rump.	
1814	Sunset				Cease obs.	



SI-MNH-958a
7-28-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

Sig II
NOCTURNAL
DATE 20²⁹ January
PG. 1



NOCTURNAL

time	species	#	dir.	hgt.	remarks	loc.
2150						
2203	Sooty Tern	1			heard, apparently going SE	
2312	"	1			called three times, headed SE	
2317	"	3	0		heard.	
2350		1	0			
2354		3	NW		called for ST - heard	
2355		1	NW		heard 2 ST - calling ST	
2357		1	0		heard	
2358		1	N		heard	
2359		1	N		heard	
2400		1	N		heard	
2401		1	N		heard	
2402		1	N		heard	
2403		1	N		heard	
2404		1	N		heard	
2405		1	N		heard	
2406		1	N		heard	
2407		1	N		heard	
2408		1	N		heard	
2409		1	N		heard	
2410		1	N		heard	
2411		1	N		heard	
2412		1	N		heard	
2413		1	N		heard	
2414		1	N		heard	
2415		1	N		heard	
2416		1	N		heard	
2417		1	N		heard	
2418		1	N		heard	
2419		1	N		heard	
2420		1	N		heard	
2421		1	N		heard	
2422		1	N		heard	
2423		1	N		heard	
2424		1	N		heard	
2425		1	N		heard	
2426		1	N		heard	
2427		1	N		heard	
2428		1	N		heard	
2429		1	N		heard	
2430		1	N		heard	
2431		1	N		heard	
2432		1	N		heard	
2433		1	N		heard	
2434		1	N		heard	
2435		1	N		heard	
2436		1	N		heard	
2437		1	N		heard	
2438		1	N		heard	
2439		1	N		heard	
2440		1	N		heard	
2441		1	N		heard	
2442		1	N		heard	
2443		1	N		heard	
2444		1	N		heard	
2445		1	N		heard	
2446		1	N		heard	
2447		1	N		heard	
2448		1	N		heard	
2449		1	N		heard	
2450		1	N		heard	
2451		1	N		heard	
2452		1	N		heard	
2453		1	N		heard	
2454		1	N		heard	
2455		1	N		heard	
2456		1	N		heard	
2457		1	N		heard	
2458		1	N		heard	
2459		1	N		heard	
2460		1	N		heard	

SI-MIZ-958a
7-28-64



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

Whistling

DATE 28-29
Pg. # 3

time	species	#	dir.	hgt.	remarks	loc.
0412	Sooty Tern	2	NE			
0420	" "	1	N			
0530	" "	1	N			
0540	" "	1	N			
0627	Kermadec Petrel	1	E			
0630	J.F. Petrel	1	E			
0642	Red-foot Booby	1	○		circled	
0644					5 mi. N. S. - course <u>N. S.</u>	

SI-MNH-958a
7-22-64

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SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

SIC 11
6th Day

DATE 29 January 1965
Pg. 1

time	species	♂	dir.	hgt.	remarks	log.
0604					Sunrise began obs	
0615	Leucophaea	1			white wings white	
0635					sun equal 1 hr to W of	
0644		1			subadult	
0838	Leucophaea	1	O		subadult	
0839	Frigate sp	1			7mm - imm maybe less	
1010						
1017	Leucophaea	1	S			
1018	RTTB	1	S			
1020	Leucophaea	1	S			
1020	Leucophaea	1	O			
1031	RTTB	1	O			
1234	bird	1	S			
1245					change to 340°	
1415	Frigate	1	SE			
1420	bird	1				
1425	bird	1	SE			
1427	bird	2				
1430	bird	1	NE		subadult	
1432	bird	1	NE			
1434	bird	1				
1435	bird	1				
1438	RTTB	1				
1440	JFP	1	S			
1451	Frigate	1				
1452	Frigate	1		200'		
1710	RTTB	1			ad. - landed on H ₂ O	
1715	BFB	1			adult	
1828					sunset, cease obs.	

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7-28-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

DATE 29-30 Jan.
Pg. # 1



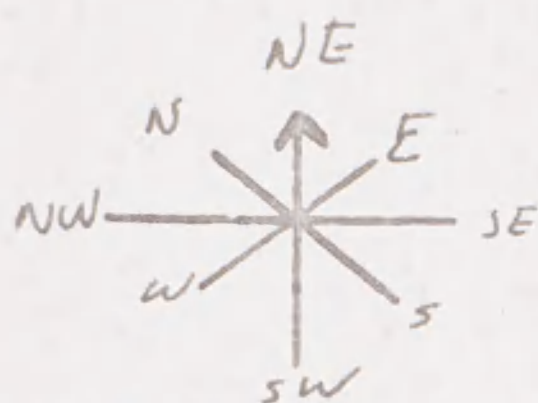
NOCTURNAL

time	species	#	dir.	hgt.	remarks	loc.
1828					sunset, begin observation	
1853	Booby sp	1	NW		large probably Blue-foot	
1955	Sooty Tern?	1			heard by Woody	
2115	Red-footed Booby	1	⊙		imm. apparently trying to land.	
2154	"	1	⊙		appears to be same bird of 2115	
2207	Sooty Tern	1	N-NE		heard only	
2213	" "	1	N-NE		seen. ad.	
2217	" "	1	?		heard	
2250	" "	3	?		"	
2303	" "	1	NW		may have been circling	
2310	" "	3+	⊙		came out of SW, appeared to be going NE	
2320	" "	1			first heard in SW, may have been part of 2310 group.	
2321	Brown Booby	1	⊙		imm. heard only	
2327	sooty Tern	3?	⊙		"	
2335	" "	1	⊙		"	
0013	" "	2	⊙		first heard to SW. (adult) appear to possibly be heading NW.	
0125	" "	2			First heard to the west.	
0145	" "	1			heard.	
0300						
0317	Sooty Tern	1	N		change course to 045	
0321	" "	1			calling off to E	
0339	" "	2	NE			
0358	" "	1	⊙			
0404	" "	1	NW			
0423	" "	2	NW			
0453	" "	1	NW			
0620	Shear-Pet	1	⊙			
0659					Sun vis	

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7-28-64

SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

DATE 30 January 1966
Pg. # 1



time	species	#	dir.	hgt.	remarks	loc.
0659					sunrise	
0714	RFB	1			imm., following ship	
0716	W-Necked Petrel	1	NNE			
0724	WTTB	1			following ship	
0815	WTTB	1			following ship	
0830						
0839	AFB	1	80		slowed for BT, & repair of Radio Antenna	
0925					Turned about to 250° @ slow speed.	
0945	R-F Booby	1			Put about to regular heading 56° and resumed speed	
1128	W-Necked Petrel	1	SW		looks like bird recorded at 0839	
1150	RTTB	1	80		ad.	
1220	Pterodroma sp.	1	Q			
1345	Red Foot Booby	1			imm.: settled on H ₂ O	
	Blue-faced	1			" " "	
1519	Red-foot	3	NE		imm.	
1525	" "	1	NE		immature	
1710	BF Booby	2	NE		1 immature + 1 adult	
1729	d. F. Petrel	1	NW			
1810	RF Booby	1	O		sub ad.	
1821	Sunset					

SI-MNH-958e
7-22-64



Neotropical
SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG -- E

DATE 30-31 January 1966
Pg. 6

time	species	#	dir.	hgt.	remarks	loc.
1821					sunset - Begin Nocturnal obs.	
1917	Sooty Tern	2	⊙			
2011	RFB	1	⊙			
2053	Sooty Tern	2	SE			
2101	BFB	1				
2104	Booby	1	⊙			
2114	Sooty T.	3	N			
2119	" "	2	?			
2138	" "	1	?			
2145	" "	1	NNW			
2151	" "	10	E3NW			
2155	" "	4	N			
2205	" "	2	?			
2222	" "	2	N			
2225	" "	3	N			
2220	" "	3	N			
2245	" "	3	-			
2250	" "	5	N			
2250	" "	4	N			
2303	" "	2	?			
2306	RFB	1			imm. collected 9PT	
2310	Sooty T.	15	E5		molting about for 10 minutes	
2320	" "	4	?			
2340	RFB	1			imm. collected 9PT banded	
2337	Sooty Tern	3	E			
2345	" "	3	E-NE			
2355	" "	2	⊙			
0003	" "	5	⊙		then headed E	
0010	" "	3	NE			
0018	" "	10	N			
0027	" "	8	N-NE			
0075	" "	3	NE		low over H2O	
0050	" "	2	NE			
0055	Red-foot Booby	1	NE			

SI-MNH-958e
7-28-64



SMITHSONIAN INSTITUTION
DIVISION OF BIRDS
AT SEA DAILY LOG - E

No Journal

DATE 30-31 January 1966
Pg. 2

time	species	#	dir.	hgt.	remarks	loc.
0105	Sooty tern	2	NE		high.	
0129	" "	2	E-NE			
0140	" "	1	N			
0145	" "	2	N			
	Red-foot Booby	1	NE		ad.	
0150	Sooty tern	3	NE			
0217					Johnston Atoll 27.2 miles ahead.	
0225					Rain squall passing over ship.	
0305	Sooty tern	1	S			
0315	" "	2	N			
0325	" "	1	O			
0350	" "	1	W			
0410	" "	3	O			
0420	" "	1	S			
0430	" "	1	W			
0450	" "	1	NE			
0510	" "	2	O			
0540	Sooty tern	2	E			
0550					End Observational Observations starts tomorrow at Johnston I.	
0600					End	

PRELIMINARY REPORT AT-SEA SURVEY
5-11 February 1966SOUTHERN GRID ONLY

This report is based on the observations and collections made within the Southern grid during the period 5-11 February 1966. A cruise track similar to that of the November-December 1965 survey was used (see Figure 1). All Grid operations were conducted within 100 miles of either Howland or Baker Islands. A portion of 5 February diurnal operations was carried on west of Howland-Baker to provide a more thorough coverage of the leeward side of these islands.

The Smithsonian survey party included Richard Crossin (Biologist in Charge), Max Thompson, Dayle Husted, Brian Harrington, Robert Delong, Jeffrey Tordoff, Norman Heryford, James Lewis, and Frank Smith. The Grid cruise was made aboard the U.S.N.S. SHEARWATER (T-AG 177). Excellent cooperation and assistance were received from the officers and crew members.

A total of 585 miles and 81 hours of diurnal observations was completed during the period 5-11 February 1966 (Table 1). A total of 714 birds of 18 species was recorded and 18 birds of 5 species were collected.

Nocturnal observations were maintained from sunset to sunrise from 4 February to midnight on 11 February. During this period 678 miles and 169 hours of observations were completed (Table 1). A total of 253 birds of 10 species was recorded, only one specimen was collected during nocturnal operations.

The total number of birds observed during the present cruise was the lowest yet recorded for the four surveys, although the overall density of 1.22 (birds/linear mile) was slightly higher than that recorded during the

previous low of the November-December 1965 cruise (1.15 birds/linear mile). Although total numbers during the present cruise were not drastically different from November-December, a considerable change was apparent in the representation of the various species groups. Shearwater-Petrels were very scarce and accounted for only 5.5 percent of the total birds, compared to the over 48 percent during November-December. Terns, however, accounted for over 68 percent of the total as apposed to only 28 percent during November-December. Practically all other groups remained essentially the same. The movements of Shearwater-Petrels to southern breeding areas and the concomittant return of the Howland Island breeding population of Sooty Terns probably accounts for the change-over in numbers of the two major groups.

Rough seas encountered throughout the Grid survey period prevented the use of the small skiff for collecting purposes. Likewise, conditions were unfavorable for the placement of oil slicks for the purpose of attracting birds, primarily storm petrels. The starboard engine on the SHEARWATER was inoperable during the period 4-8 February and reduced speeds were necessitated during this time. The combined unfavorable weather conditions and mechanical difficulties account for the low number of birds collected.

SPECIES ACCOUNTSWedge-tailed Shearwater (12 + 4 nocturnal)

During the three previous cruises this species has consistently been one of the most abundant procellarids. During previous cruises, the vast majority of sightings have been dark phase southern hemisphere birds. During the present cruise only two of nine recorded as to color phase were dark. Apparently southern breeding birds have moved out of the area and only a few stragglers from northern breeding areas are present. Large numbers of dark phase birds were noted on 3 February north of the grid area (between 5 and 6 degrees N)

Audubon's Shearwater (2 + 6 Nocturnal)

This species has been observed irregularly in very low numbers since September. Probably a few stragglers from the Phoenix Islands account for its presence in the Grid.

Juan Fernandez Petrel (2)

This species was recorded in low numbers during the November-December survey but not during September or October. Apparently a few birds migrate through the Grid, but there is no indication as yet that large numbers of this species utilize the area.

Bulwer's Petrel (10)

This species was recorded in low numbers during every survey period from September 1965 to the present. One specimen was collected.

Phoenix Island / Tahitian Petrel

Only a few individuals referable to these two very similar species have been recorded in the Grid thus far. Most likely these are Phoenix Island Petrels from breeding areas in the Line Islands or Phoenix group.

Leach's Storm Petrel (10)

All 10 birds accorded to this species were collected specimens. Undoubtedly the vast majority of the 106 unidentified white-rumped storm petrels recorded are referable to this species. However, low numbers of Harcourt's and Wilson's Storm Petrels have been collected in the Grid during previous cruises and may represent a small percentage of the unidentified birds. These two latter species were not collected during the present cruise. White-rumped storm petrels were first encountered in modest numbers during the October 1965 cruise and had increased greatly by November to the approximate present numbers. The Grid apparently serves as a "wintering" area for Leach's Storm Petrel.

Red-tailed Tropicbird (2)

This species has been represented by very low numbers during all previous cruises. One individual, banded at Enderbury Island, was collected in the Grid. This further enlarges the list of species from the Phoenix group which utilize the Grid area.

White-tailed Tropicbird (4)

Considerably greater numbers of this species were recorded during the October and November-December cruises. Numbers of this far-ranging species can probably be expected to fluctuate considerably in the Grid Area.

Blue-faced Booby (33 + 5 nocturnal)

Numbers were comparable to previous cruises. The majority of birds were sighted on 5 and 7 February in close proximity to Howland-Baker. One collected individual had been banded on Enderbury Island. This represents the fourth specimen taken in the Grid from that island.

Brown Booby (3)

The same low number was recorded during the November-December Cruise. Greater numbers were recorded during September and October. Grid sightings are most likely Howland based birds.

Red-footed Booby (14 + 5 nocturnal)

Very low numbers were recorded on the three previous cruises. A build-up of the Howland Island breeding colony might account for greater numbers recorded during the present cruise. Two blue-streamered birds from Howland Island were observed in the Grid and a banded bird from Enderbury Island was collected.

Great Frigatebird (1)
Lesser Frigatebird (1)
 Unidentified frigatebirds (8)

Frigatebirds were fairly numerous during September and October, but only a single individual was recorded during the November-December cruise. Apparently numbers are starting to increase in the area and should continue to do so if new breeding cycles are begun on Howland Island.

Ruddy Turnstone (1)

Shorebirds are still abundant on the two central islands, especially Baker, but these are evidently still settled down for the winter.

Sooty Tern (476 + 195 nocturnal)

After reaching a low number in the Grid area during November-early December, this species is apparently starting to increase in numbers. After a year's absence from Howland Island, swirls were present over the island during the present survey and presumably a new breeding cycle will soon commence. Birds were distributed generally throughout the Grid except south of Baker where only five birds were recorded for 10 and 11 February. Large numbers were found in feeding flocks north of the Grid on 3 and 4 February. Four birds were collected during the present cruise, but none of these were banded. Terns, predominantly Sooty, made up 94 percent of the birds in feeding flocks.

Gray-backed Tern (5)

The same low numbers were recorded on all previous cruises.

Common Noddy Tern (3)

With at least several hundred birds based on Baker Island, this species might be expected more commonly in the Grid area. However, its manner of feeding in compact flocks might easily allow a population of this size to be missed with random survey movements.

Blue-gray Noddy Tern (1)

The single individual was sighted on 8 February northwest of Howland Island. This is the first record of its occurrence in the Grid.

Fairy Tern (3)

This species was commonly observed in mixed feeding flocks during the September and October surveys, but has been quite scarce since that time in the Grid. Only two were recorded in the Grid during the November-December survey.

TABLE 1. Summary of Southern Grid observations during the period
5-11 February 1966

<u>Date</u>	<u>No. Miles</u>	<u>DIURNAL</u>		
		<u>No. Hours</u>	<u>No. Birds</u>	<u>No. Species</u>
5 February	74	10.4	101	7
6	75	12.0	66	9
7	74	10.6	226	8
8	82	12.0	35	9
9	118	12.2	228	8
10	54	12.1	27	9
11	<u>108</u>	<u>12.0</u>	<u>31</u>	<u>6</u>
TOTALS	585	81.3	714	18 (8.0/day)

<u>NOCTURNAL</u>				
4-5 February	75	12.1	8	4
5-6	75	11.9	33	4
6-7	86	11.1	79	5
7-8	92	11.9	54	8
8-9	98	11.9	10	2
9-10	99	11.9	21	5
10-11	107	11.9	41	3
11	<u>46</u>	<u>5.1</u>	<u>7</u>	<u>1</u>
TOTALS	678	87.8	253	10 (4.0/night)
GRAND TOTALS (Diurnal + Nocturnal)	1,263	169.1	967	21

TABLE 2. Diurnal density of species groups (Southern Grid) 5-11 February.

<u>Species Group</u>	<u>No. Birds</u>	<u>Birds/sq. mi.</u>	<u>Estimated population/ 31,400 sq. mi.</u>	<u>% Total Birds</u>
Shearwater-Petrel	39	0.03	942	5.48
Storm Petrels	116	0.20	6,280	16.24
Terns	488	0.28	8,792	68.34
Tropicbirds	6	0.005	157	0.84
Boobies	51	0.04	1,256	7.14
Frigatebirds	10	0.004	125	1.40
Shorebirds	1	0.002	63	0.14
Miscellaneous	<u>3</u>	<u>0.003</u>	<u>94</u>	<u>0.42</u>
TOTALS	714	0.61		100.00

TABLE 3. Diurnal abundance of species within the Southern Grid, 5-11 February.

<u>Species</u>	<u>No. Birds</u>	<u>Birds/ linear mile</u>	<u>Number Collected</u>	<u>Status over</u>		
				<u>Sept.</u>	<u>Oct.</u>	<u>Nov.-Dec.</u>
Wedge-tailed Shearwater	12	0.021		-	-	-
Audubon's Shearwater	2	0.003		+	-	+
Juan Fernandez Petrel	2	0.003		+	+	-
Bulwer's Petrel	10	0.017	1	+	-	+
Leach's Storm Petrel	10	0.017	10	+	+	-
Unidentified White-rumped Storm Petrel	106	0.181		+	+	-
Red-tailed Tropicbird	2	0.003	1	-	+	+
White-tailed Tropicbird	4	0.007		0	-	-
Blue-faced Booby	33	0.056	2	-	-	+
Brown Booby	3	0.005		-	-	0
Red-footed Booby	14	0.024		+	+	+
Great Frigatebird	1	0.002		+	-	+
Lesser Frigatebird	1	0.002		-	0	0
Unidentified Frigatebird	8	0.014		-	-	+
Ruddy Turnstone	1	0.002		-	-	-
Sooty Tern	476	0.814	4	-	-	+
Gray-backed Tern	5	0.01		+	+	+
Common Noddy Tern	3	0.005		-	-	-
Blue-gray Noddy Tern	1	0.002		+	+	+
Fairy Tern	3	0.005		--	-	+
Unidentified Shearwater Petrel	13	0.022		-	-	-
Miscellaneous unidentified	<u>4</u>	<u>0.007</u>				
TOTALS	714	1.22	18			
GRAND TOTAL (Diurnal + Nocturnal)	1,263		19			

TABLE 4. Nocturnal abundance of species within the Southern Grid, 4-11 February.

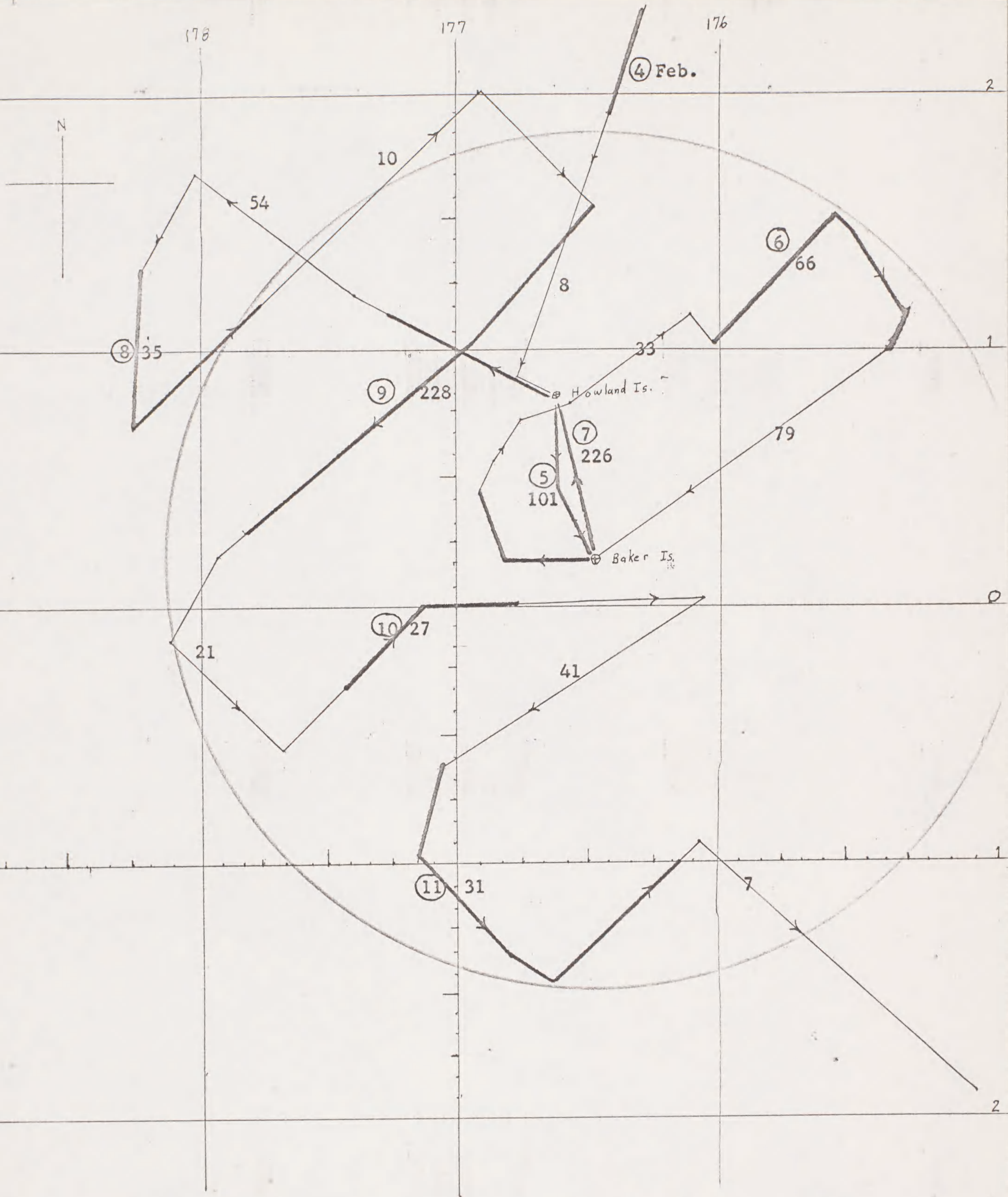
<u>Species</u>	<u>No. Birds</u>	<u>Birds/ linear mile</u>	<u>No. Collected</u>
Wedge-tailed Shearwater	4	0.006	
Audubon's Shearwater	6	0.009	
Phoenix Island/Tahitian Petrel	2	0.003	
Unidentified Shearwater Petrel	12	0.018	
White-throated Storm Petrel	1	0.001	
Unidentified Storm Petrel	5	0.007	
Blue-faced Booby	5	0.007	
Red-footed Booby	5	0.007	1
Sooty Terns	195	0.228	
Unidentified Shorebirds	2	0.003	
Miscellaneous unidentified	<u>16</u>	<u>0.024</u>	<u>—</u>
TOTAL	253	0.373	1

TABLE 5. Banded and/or color-tagged birds observed or collected, 5-11 February.

<u>Species</u>	<u>Age</u>	<u>Date</u>	<u>Band or Tag</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Origin</u>	<u>Distance from origin</u>
Red-tailed Tropicbird	A	7 Feb.	625-87265	00° 38'N	176° 35'W	Enderbury	402 mi.
Blue-faced Booby I		5 Feb.	Blue Streamer	00° 35'N	176° 37'W	Howland	13 mi.
Blue-faced Booby A		7 Feb.	737-22501	01° 02'N	177° 01'W	Enderbury	437 mi
Blue-faced Booby I		9 Feb.	Blue Streamer	01° 27'N	176° 35'W	Howland	40 mi
Red-footed Booby		5 Feb	Blue Streamer	00° 37'N	176° 37'W	Howland	11 mi
Red-footed Booby A		7 Feb.	Blue Streamer	01° 06'N	177° 09'W	Howland	36 mi.
Red-footed Booby S		9 Feb.	747-56346	00° 17'N	177° 49'W	Enderbury	456 mi.

TABLE 6. Diurnal Abundance of flocks, 5-11 February 1966.

<u>Date</u>	<u>No. Flocks</u>	<u>No. Birds</u>	<u>% Shearwater- Petrel</u>	<u>% Tern</u>
5 Feb.	2	50		100
6	3	31	3	97
7	10	155	3 (storm petrel)	94
8	1	7	100 (storm petrel)	
9	6	155	3	97
10	0			
11	<u>0</u>	<u> </u>	<u> </u>	<u> </u>
TOTAL	22	398	Ave. 5%	Ave. 94%



— Nocturnal
 — Diurnal

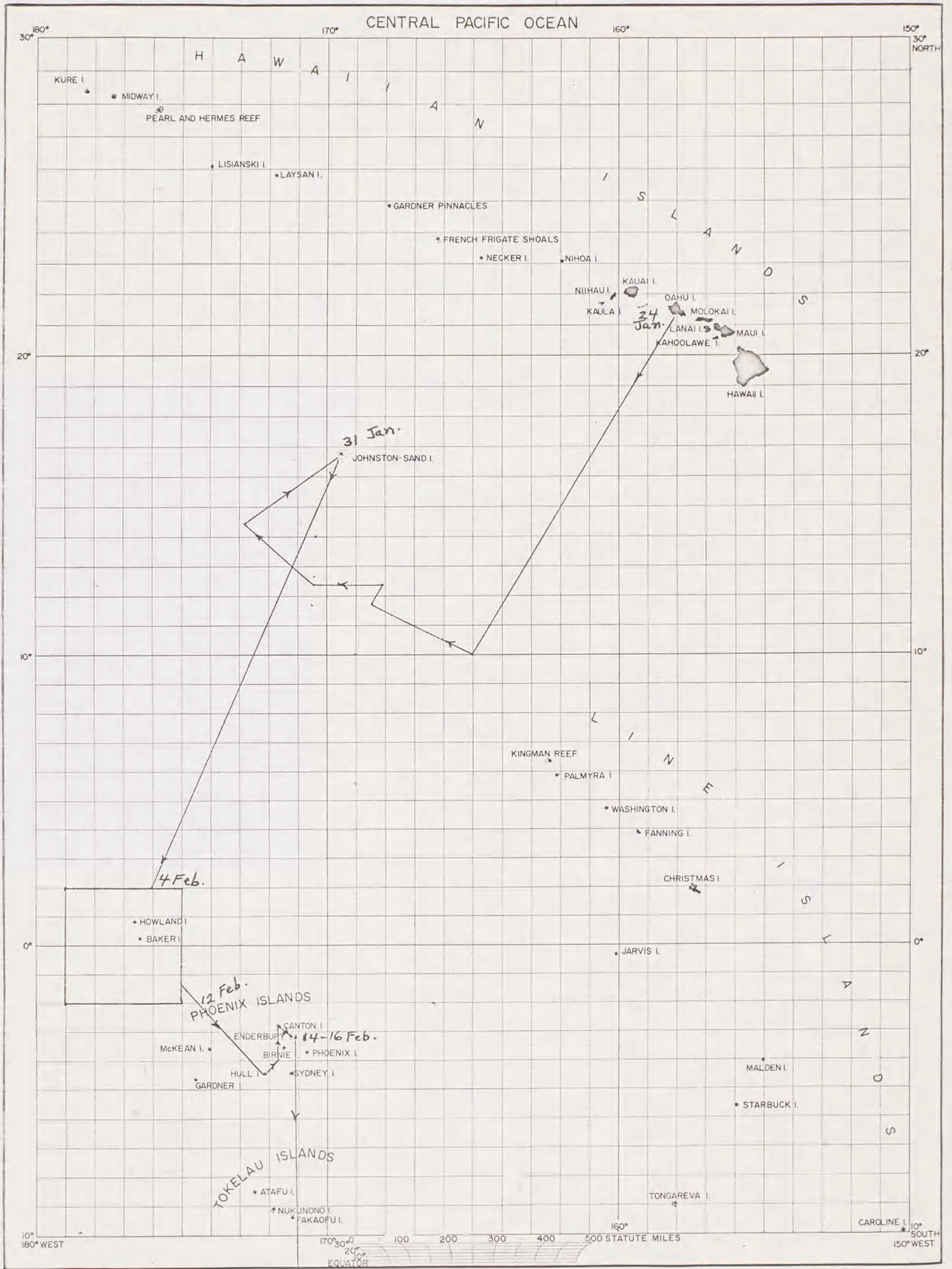
Fig. 1. Southern Grid cruise track, 4-11 February 1966.

Circled numbers = date.

Uncircled numbers = number of birds seen on respective diurnal and nocturnal periods.

Scale: 2 inches = 60 miles at 0 degrees latitude.

At-Sea SIC 11 - first half. 24 Jan - 18 Feb. 1966



To Samoa
Via Swains Is. 18 Feb.

AT-SEA SIC 11
Oahu to Southern Grid via Johnston Atoll

24 January - 4 February 1966.

	24	25	26	27	28	29	30	31	1	2	3	4	TOTALS
Black-foot Albatross	2	1											3
Laysan Albatross		1							1				2
Wedge-tailed Shearwater	1		1	5							209	42	258
Christmas Island Shearwater			1								23	1	25
Newell's Shearwater											6		6
Audubons Shearwater											2		2
Kermadec Petrel				10	8	2			3	2			25
Phoenix Island/Tahitian Pet.					1	1					2		4
White-necked Petrel					4		2						6
Juan Fernandez Petrel	1			22	20	1	1		1	1	2	3	52
<i>Pterodroma externa</i>				2								1	3
Black-winged Petrel											3		2
<i>Pterodroma hypoleuca</i> ?				2									2
Dark-rumped Petrel				2	1								3
Bulwer's Petrel											10	5	15
Shearwater-Petrel		2	3	21	5	2	1		1	6	49	23	113
White-throated Storm Pet.												1	1
Leach's Storm Petrel											3	2	5
Storm Petrel species		2	2	4	2						48	19	77
Red-tailed Tropicbird			2	1		3	1		1	2	1	1	12
White-tailed Tropicbird		3	10		2		2		1	1	1	3	23
Tropicbird species		2											2
Blue-faced Booby				2	2	3	3			1		2	13
Brown Booby	23		1	1				15					40
Red-footed Booby	23	9	9		1	4	9	48	6			4	113
Booby species	3		1	1		1							6
Great Frigatebird			4	2	3	1		7	1	1			19
Lesser Frigatebird												2	2
Frigatebird species						4							4
Pomarine Jaeger	70												70
Jaeger species	3												3
Sooty Tern	27	196	54	56	8			284	10	104	564	255	1558
Gray-backed Tern												2	2
Common Noddy Tern								1			4		5
Fairy Tern		7	1	3		1		2		2	1		17
Tern species								1					1
Misc. unidentified	6	6	2			1				2		1	18
TOTALS	158	230	91	134	57	24	19	358	25	122	927	367	2512

AT-SEA SIC 11
Southern Grid to Samoa via Swains I.

12-18 February 1966

	12	13	14	16	17	18	TOTALS
Wedge-tailed Shearwater	3	4	5	17	8	23	60
Christmas Island Shearwater				1			1
Audubons Shearwater	3			1	1		5
Phoenix Island Petrel			1				1
Bulwers Petrel		2			1		3
Shearwater-Petrel						2	2
Leachs Storm Petrel					1		1
Harcourts Storm Petrel			1				1
Storm Petrel Species	14	2	5	12	9	3	45
White-tailed Tropicbird					7	1	8
Blue-faced Booby	6	9	4	5			24
Brown Booby		5	17	1		1	24
Red-footed Booby	1	3		5	2	1	12
Booby species	1						1
Great Frigatebird			5				5
Lesser Frigatebird					9		9
Frigatebird species			19	1	5		25
Golden Plover				2	1		3
Ruddy Turnstone				6			6
Sooty Tern	193	155	50	79	23		500
Gray-backed Tern	71	6	8	11			96
Common Noddy Tern		12	9		195	3	219
Hawaiian Noddy Tern		3		6			9
Blue-gray Noddy Tern			1				1
Fairy Tern	21	2	2		140	27	192
Tern species	5		62	4	28		99
Misc. unidentified	11			4	4		19
TOTALS	329	203	189	155	434	61	1371

SOUTHERN GRID

PRELIMINARY REPORT AT-SEA SURVEY NO. 5

27 February-5 March 1966

This report is based upon the observations and collections made within the Southern Grid during the period 27 February-5 March 1966. A cruise track similar to those of the November-December 1965 and early February 1966 surveys was used (see Figure 1). Essentially all grid operations were conducted within 100 miles of Baker Island.

The Smithsonian survey party included Richard S. Crossin (Biologist-in-Charge), Max C. Thompson, Dayle Husted, Brian Harrington, Norman Heryford, James Lewis and Frank Smith. The grid cruise was made aboard the USNS Shearwater (T-AG 177). Excellent cooperation and assistance was received from the officers and crew members.

A total of 762 miles and 81 hours of diurnal observations were completed during the grid period (Table 1). During this time 1430 birds of 21 species were recorded and 40 birds of 6 species collected.

Nocturnal observations were maintained from sunset to sunrise throughout the grid period except during island operations. During this period 514 miles and 68 hours of observations were completed (Table 1). A total of 159 birds of 13 species was recorded. Only one specimen was collected during nocturnal operations.

The total number of birds recorded during the present cruise was almost exactly double that of the early February 1966 cruise. The species most affecting this increase were Sooty Terns and white-rumped storm petrels, both of which were approximately twice as abundant during the present cruise. There was also a tenfold increase in Bulwer's Petrels

over the previous cruise. The percentage representations of species groups remained essentially the same as early February, with a slight increase in shearwater/petrels during the present cruise. A continual increase in total numbers can be expected throughout the following months as migrating shearwaters move into the area and greater numbers of Sooty Terns congregate on Howland Island for the current breeding season.

SPECIES ACCOUNTS

Wedge-tailed Shearwater (21 + 3 nocturnal).

Numbers of this species approximately doubled over last cruise, but density is still far below that recorded during fall 1965. All but 3 of the birds recorded during the present cruise were dark phase from southern hemisphere populations. This has consistently been the case except for a preponderance of light phase individuals during early February 1966. Numbers were so low, however, that no trends can be postulated. One specimen was collected.

Sooty/Slender-billed Shearwater (1).

One individual was sighted on 2 March. This apparently was an early straggler proceeding north ahead of the mass spring migration. Neither of these species have been recorded in the grid area since early December 1965 at the termination of the fall southward migration. Numbers can be expected to increase during the following months.

Christmas Island Shearwater (1).

This species has always been recorded in low numbers within the grid. A few stragglers from breeding colonies in the Phoenix group are probably to be expected irregularly.

Audubon's Shearwater (1 + 1 nocturnal).

Very low numbers have been recorded in the grid since September 1965. As with the previous species, a few stragglers from the Phoenix group probably account for its presence in the grid.

Juan Fernandez Petrel (1).

Small numbers were apparently migrating through the grid during November-December 1965, but other than this the species has either been absent or encountered in very low numbers.

Pterodroma hypoleuca (1).

The single individual was probably a Black-winged Petrel (P. h. nigripennis). These were not encountered during the previous cruise, but were present from September-December 1965.

Bulwer's Petrel (101 + 3 nocturnal).

Until the present cruise this species has always been recorded in low numbers. Five specimens were collected during the present cruise. All were at the terminating stages of molt, with flight feathers complete. Most sightings were of birds moving in an easterly-southeasterly direction. The greatly increased numbers are apparently migrating birds moving to the Phoenix or Line Islands.

Leach's Storm Petrel (21).

Unidentified white-rumped storm petrels (172 + 15 nocturnal).

The 21 Leach's Storm Petrels represent collected specimens. Undoubtedly the vast majority of the 187 unidentified birds belong to this species. A small percentage of the unidentified birds may be referable to Wilson's or Harcourt's Storm Petrels, both of which were collected in the grid during fall 1965. Storm petrels were first encountered in the grid area

during October 1965 and have irregularly increased since. Greatest numbers to date were encountered during the present cruise. The grid unquestionably seems a part of the species' wintering grounds.

Red-tailed Tropicbird (4 + 1 nocturnal).

This species has been recorded in low numbers during all previous cruises. Two specimens were collected.

White-tailed Tropicbird (5 + 2 nocturnal)

Equally low numbers were recorded during early February 1966. Greater numbers were present during the fall 1965 surveys.

Blue-faced Booby (81 + 8 nocturnal).

Numbers of this species were comparatively high during the present cruise, but this is more likely the result of increased diurnal cruise activity in the vicinity of the islands rather than an increase in birds. Four banded birds were collected during the present cruise; 3 from the Phoenix Islands (Birnie, Enderbury and Phoenix), and one from Jarvis in the Line Islands (see Table 5). A total of six specimens was collected.

Brown Booby (3).

The three sightings were in the vicinity of Howland Island. This species apparently does not wander extensively like the Blue-faced Booby and most birds utilizing the grid are likely based on Howland Island.

Red-footed Booby (13 + 4 nocturnal).

Approximately the same numbers were recorded as during the early February cruise. Most sightings were on 27 February near the central islands. Although some interisland movement between Howland-Baker and the Phoenix group occurs, the majority of the birds found in the grid are likely based on Howland Island.

Great Frigatebird (1).

Unidentified frigatebirds (36).

Frigatebird numbers have been extremely low during the two previous cruises. The present increase corresponds with the advent of a new breeding cycle of Great Frigatebirds on Howland Island. The majority of unidentified frigatebirds are probably referable to this species.

Golden Plover (4 + 3 nocturnal).

Ruddy Turnstone (2 + 1 nocturnal).

As expected, the considerable numbers of wintering shorebirds are beginning to move about with the advent of spring migration and at-sea sightings should increase during the following spring months.

Sooty Tern (937 + 85 nocturnal).

Numbers have approximately doubled over early February. This increase is apparently the result of prebreeding birds moving into the area to begin nesting on Howland Island. Numbers fluctuate widely in different portions of the grid. Most birds were recorded south of Baker Island and between Baker and Howland during the present cruise, whereas during early February the area south of Baker was practically devoid of terns. According to all indications the colony on Howland Island should begin nesting sometime during March. Five specimens were collected, none of which were banded.

Gray-backed Tern (1 + 1 nocturnal).

Common Noddy Tern (2).

Blue-gray Noddy Tern (2).

Fairy Tern (5 + 4 nocturnal).

These four species have always been recorded in low numbers in the grid

area. Common Noddy Tern numbers fluctuate considerably, depending upon chance encounter of Baker Island breeding birds. Blue-gray Noddies were first encountered in the grid during the early February survey.

TABLE 1. Summary of Southern Grid observations during the period
27 February- 5 March 1966.

<u>DIURNAL</u>				
<u>Date</u>	<u>No. Miles</u>	<u>No. Hours</u>	<u>No. Birds</u>	<u>No. Species</u>
27 February	103	10.5	698	9
28	120	10.6	165	9
1 March	118	11.8	139	9
2	124	12.2	191	12
3	93	12.0	120	10
4	107	12.1	83	10
5	<u>97</u>	<u>12.0</u>	<u>34</u>	<u>6</u>
TOTALS	762	81.2	1430	21 (9.3/day)
<u>NOCTURNAL</u>				
27 February	69	6.9	2	2
27-28	88	10.4	44	1
28 Feb.-1 March	39	3.6	27	5
1-2 March	100	11.2	8	3
2-3	114	11.9	12	5
3-4	56	12.0	26	7
4-5	<u>48</u>	<u>11.9</u>	<u>40</u>	<u>8</u>
TOTALS	514	67.9	159	13 (4.4/night)
GRAND TOTALS (Diurnal + Nocturnal)	1276	149.1	1589	21

Table 2. Diurnal density of species groups (Southern Grid) 27 February-5 March.

<u>Species Group</u>	<u>No. Birds</u>	<u>Birds/sq. mi.</u>	<u>Estimated Population / 31,400 sq. mi.</u>	<u>%Total Birds</u>
Shearwater-Petrel	137	0.090	2826	9.58
Storm Petrels	197	0.259	8133	13.77
Terns	947	0.414	13000	66.23
Tropicbirds	9	0.006	188	0.63
Boobies	97	0.063	1978	6.78
Frigatebirds	37	0.012	377	2.59
Shorebirds	6	0.008	251	0.42
Miscellaneous	-	-	-	-
TOTALS	<u>1430</u>	<u> </u>	<u> </u>	<u>100.00</u>

Table 3. Diurnal abundance of species within the Southern Grid 27 February-5 March.

<u>Species</u>	<u>No.</u> <u>Birds</u>	<u>Birds/</u> <u>linear mile</u>	<u>Number</u> <u>Collected</u>	<u>Status over</u>			
				<u>Sept.</u>	<u>Oct.</u>	<u>Nov-Dec.</u>	<u>Feb.</u>
Wedge-tailed Shearwater	21	.028	1	-	-	-	+
Sooty/Slender-billed Shearwater	1	.001	-	-	-	-	+
Christmas Island Shearwater	1	.001	-	+	+	-	+
Audubon's Shearwater	1	.001	-	0	-	+	-
Juan Fernandez Petrel	1	.001	-	+	+	-	-
<u>Pterodroma hypoleuca</u>	1	.001	-	-	0	-	+
Bulwer's Petrel	101	.133	5	+	+	+	+
Shearwater/Petrel	10	.013	-	-	-	-	+
Leach's Storm Petrel	21	.027	21	+	+	+	+
White-rumped Storm Petrel	172	.226	-	+	+	+	+
Storm Petrel Species	4	.005	-	-	-	-	-
Red-tailed Tropicbird	4	.005	2	-	+	+	+
White-tailed Tropicbird	5	.007	-	+	-	-	+
Blue-faced Booby	81	.106	6	+	+	+	+
Brown Booby	3	.004	-	-	-	0	0
Red-footed Booby	13	.017	-	+	+	+	-
Great Frigatebird	1	.001	-	-	-	+	0
Frigatebird Species	36	.047	-	-	-	+	+
Golden Plover	4	.005	-	-	-	-	+
Ruddy Turnstone	2	.003	-	-	-	0	+
Sooty Tern	937	1.230	5	-	-	+	+
Gray-backed Tern	1	.001	-	0	+	-	-
Common Noddy Tern	2	.003	-	-	-	-	-
Blue-gray Noddy Tern	2	.003	-	+	+	+	+
Fairy Tern	5	.007	-	-	-	+	+
TOTALS	1430	1.876	40				

Table 4. Nocturnal abundance of species within the Southern Grid, 27 February-5 March.

<u>Species</u>	<u>No. Birds</u>	<u>Birds/ linear mile</u>	<u>No. Collected</u>
Wedge-tailed Shearwater	3	.006	-
Audubon's Shearwater	1	.002	-
Bulwer's Petrel	3	.006	-
Shearwater/Petrel	7	.013	-
Storm Petrel (White-rump)	15	.030	-
Storm Petrel (Unidentified)	3	.006	-
Red-tailed Tropicbird	1	.002	-
White-tailed Tropicbird	2	.004	-
Tropicbird species	4	.008	-
Blue-faced Booby	8	.015	-
Red-footed Booby	4	.008	1
Booby (Unidentified)	3	.006	-
Golden Plover	3	.006	-
Ruddy Turnstone	1	.002	-
Shorebird species	1.	.002	-
Sooty Tern	85	.165	-
Gray-backed Tern	1	.002	-
Fairy Tern	4	.008	-
Tern species	1	.002	-
Bird species	<u>9</u>	<u>.017</u>	<u>-</u>
TOTALS	159	.310	1

Table 5. Banded and/or color-tagged birds observed or collected within the Southern Grid, 27 February-5 March 1966.

<u>Species</u>	<u>Date</u>	<u>Age</u>	<u>Band No.</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Origin</u>	<u>Distance from Origin</u>
Blue-faced Booby	27 Feb	Adult	587-81209	00-12S	176-29W	Jarvis	987 mi.
"	" 28 "	Subadult	757-66939	00-28N	176-00W	Birnie	365 mi.
"	" 2 Mar	Adult	757-65874	01-21N	176-40W	Phoenix	473 mi.
"	" " "	Subadult	757-67114	01-11N	176-50W	Enderbury	435 mi.

Table 6. Diurnal abundance of flocks, 27 February-5 March 1966.

<u>Date</u>	<u>No. Flocks</u>	<u>No. Birds</u>	<u>% Shearwater/Petrels</u>	<u>% Terns</u>
27 February	17	626	1	88
28 "	6	71	10	90
1 March	2	11	--	100
2 "	4	137	5	87
3 "	2	50	-	60
4 "	2	16	6	90
5 "	<u>0</u>	<u>--</u>	<u>-</u>	<u>--</u>
TOTAL	33	911	Average 2%	Average 87%

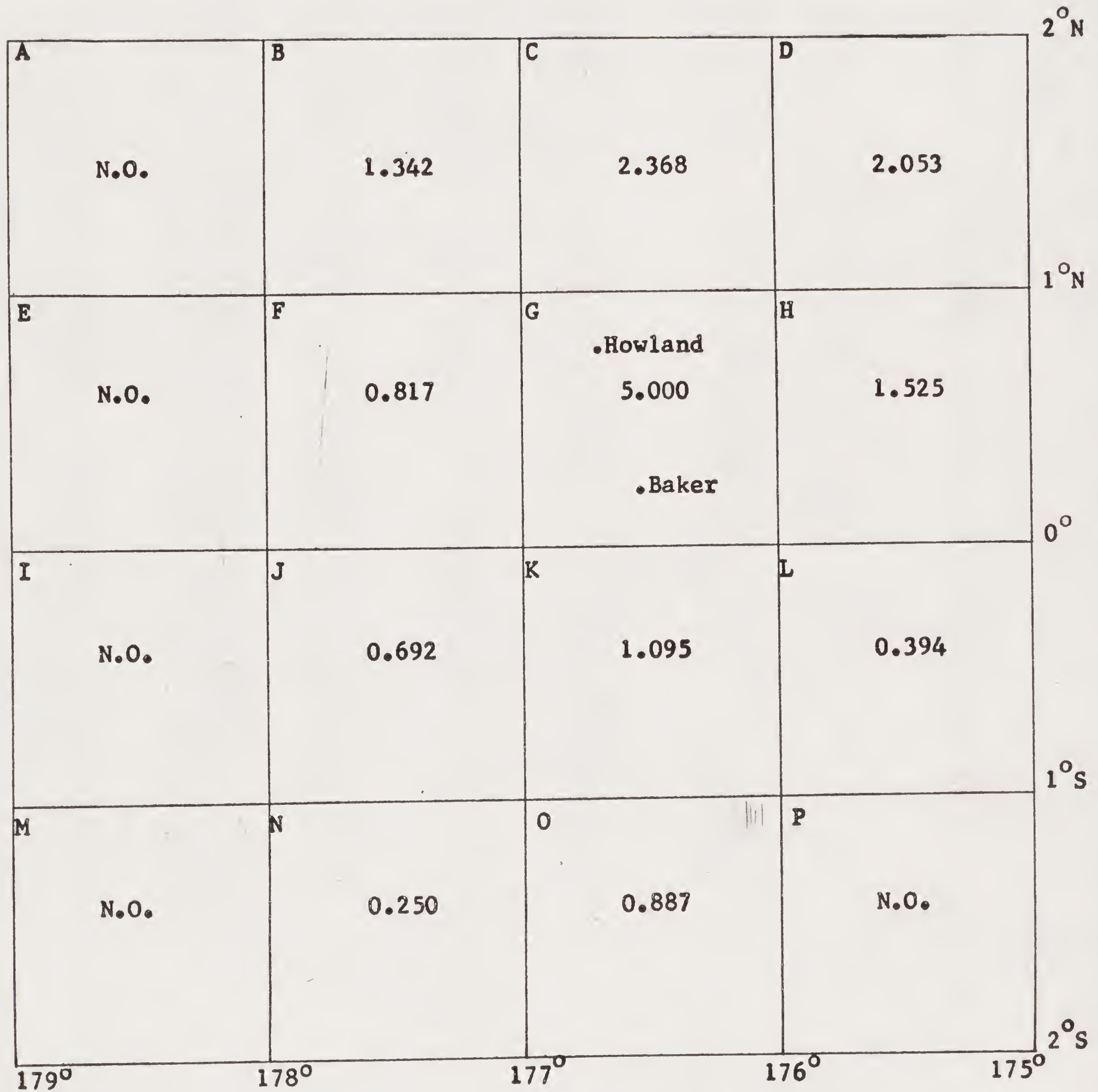
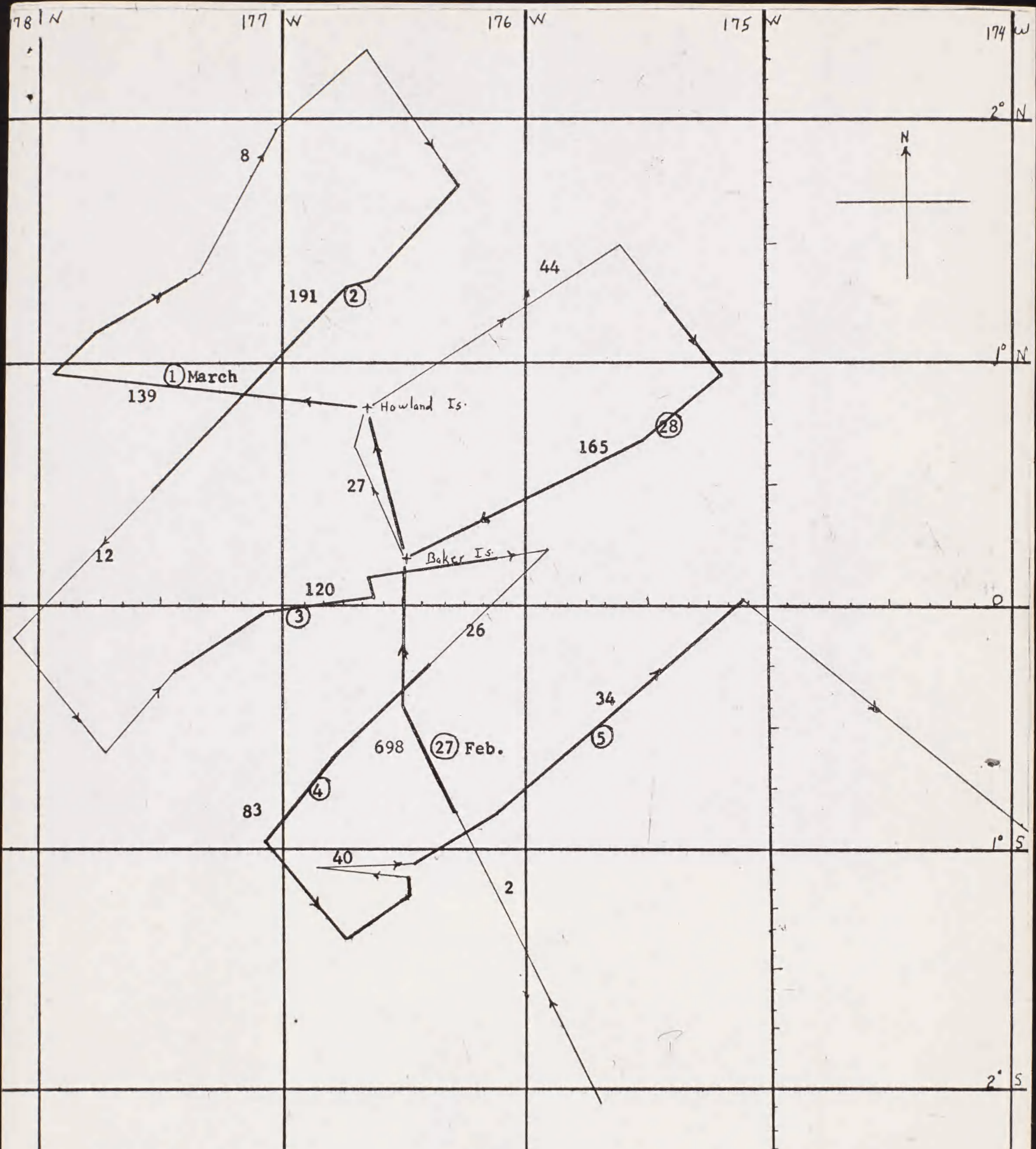


Figure 2. Diurnal bird densities (birds/linear mile) by square degrees throughout the Southern Grid area (27 February-5 March 1966).

N.O. = no observations



_____ Nocturnal
 _____ Diurnal

Figure 1. Southern Grid # 5 cruise track, 27 February-5 March 1966.

Circled numbers = date.
 Uncircled numbers = number of birds seen on
 respective diurnal and nocturnal periods.
 Scale: 2 inches = 60 miles at 0° latitude.

DATE 24 Jan, 1966

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID %	TL SKY	OPA SKY	WAVES ^{SWELL}	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100															
0200															
0300															
0400															
0500															
0600															
0700															
0800															
0900															
1000															
1100															
1200															
1300															
1400															
1500															
1600	21-00 N	158-04 W	W/ly cldy	20	1015	75	71	86	7	7	340/5/3	72	16	340	211 10K
1700	20-52 N	158-05 W	" "	20	1016	74	71	91	8	8	320/6/4	72	22	350	211 10K
1800	20-43 N	158-11 W	cloudy	20	1016	74	71	91	9	9	320/6/4	72	22	350	211 10K
1900	20-33 N	158-15 W	"	20	1016	74	71	91	8	8	320/6/4	72	20	350	211 10K
2000	20-24 N	158-21 W	Few cldy	20	1017	74	67	78	1	0	045-6-6	72	20	045	211 10K
2100	20-18 N	158-28 W	"	20	1017	74	67	78	1	0	045-6-6	72	20	045	211 10K
2200	20-09 N	158-33 W	"	20	1017	74	67	78	1	0	045-6-6	72	20	045	211 10K
2300	20-01 N	158-38 W	"	20	1017	74	67	78	1	0	045-6-6	72	20	045	211 10K
2400	19-49 N	158-45 W	"	20	1017	74	67	78	1	0	045-6-6	72	20	045	211 10K

REMARKS:

ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES;
 WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

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DATE 25 Jan. 1966

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID	TL SKY	OPA SKY	SWELL WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	19-40N	158-54W	Few Clds	15	1016	74	70	86	2	0	045-6-8	72	26	045	211 10.5
0200	19-30N	158-59W	" "	15	1016	74	70	86	3	2	045-6-8	72	26	045	211 10.5
0300	19-20N	159-05W	" "	15	1015	74	70	86	3	2	045-6-8	72	26	045	211 10.5
0400	19-10N	159-12W	" "	15	1015	74	70	86	5	3	045-6-8	72	26	045	211 10.5
0500	18-58N	159-20W	" "	20	1015	75	68	78	4	3	050-6-6	72	22	040	211 10.5
0600	18-47N	159-28W	" "	20	1014	75	68	78	4	3	050-6-6	72	22	040	211 10.5
0700	18-37N	159-34W	" "	20	1014	75	68	78	5	4	050-6-6	72	20	045	211 10.5
0800	18-29N	159-39W	MAINLY CLOUDY	20	1015	76	70	82	6	4	045-6-6	78	20	050	211 10.5
0900	18-20N	159-44W	PARTLY CLOUDY	20	1016	77	67	74	5	4	090-6-8	78	20	090	211 10.5
1000	18-11N	159-50W	"	20	1016	77	67	74	5	4	090-6-8	78	20	090	211 10.5
1100	18-01N	159-56W	"	20	1016	77	67	74	5	4	090-6-8	78	20	100	211 10.5
1200	17-53N	160-02W	"	20	1016	77	67	74	5	4	090-6-8	78	20	110	211 10.5
1300	17-45N	160-08W	"	20	1015	76	67	74	7	5	090-6-8	77	20	100	211 10.5
1400	17-36N	160-14W	"	20	1015	76	67	74	5	4	090-6-8	77	17	105	211 10.5
1500	17-27N	160-20W	"	20	1014	76	67	74	4	3	110-9-6	77	17	105	211 10.5
1600	17-19N	160-26W	"	20	1014	76	67	74	3	1	090-6-6	77	15	095	211 10.5
1700	17-08N	160-34W	"	20	1015	76	70	82	4	3	070-6-6	78	16	080	211 10.5
1800	16-59N	160-40W	"	20	1014	76	70	82	5	4	060-6-6	78	16	075	211 10.5
1900	16-50N	160-45W	"	20	1014	76	70	82	6	5	060-6-6	78	16	075	211 10.5
2000	16-41N	160-51W	"	20	1015	76	66	70	1	1	090-6-8	78	20	090	211 10.5
2100	16-32N	160-57W	FEW CLOUDS	20	1015	76	66	70	1	1	090-6-8	78	20	090	211 10.5
2200	16-23N	161-02W	"	20	1015	76	66	70	1	1	090-6-8	78	20	090	211 10.5
2300	16-14N	161-08W	"	20	1015	76	66	70	1	1	090-6-8	78	20	090	211 10.5
2400	16-05N	161-13W	"	20	1015	76	66	70	1	1	090-6-8	78	20	090	211 10.5

REMARKS:

XRAY

ALL TIMES LOCAL (WILSON); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

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DATE 26 Jan. 1966

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID/O	TL SKY	OPA SKY	SWELL WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	15-57N	161-20 W	Clear	15	1015	76	66	70	1	0	090-6-8	78	17	090	211 10.5
0200	15-47N	161-25 W	Few Cls	15	1014	76	66	70	3	2	090-6-8	78	17	090	211 10.5
0300	15-38N	161-31 W	PTly Cls	15	1014	76	67	74	4	3	090-6-8	78	16	090	211 10.5
0400	15-29N	161-36 W	Few Cls	15	1014	76	67	74	1	0	090-6-8	78	18	090	211 10.5
0500	15-18.0N	160-45 W	"	20	1014	76	67	74	2	1	080-7-7	78	18	080	211 10.5
0600	15-10.5N	161-51 W	PART-CLDY	20	1014	76	67	74	5	3	080-7-7	78	18	075	211 10.5
0700	15-02 N	161-57 W	CLOUDY	20	1014	76	67	74	6	4	080-7-7	78	18	075	211 10.5
0800	14-53N	162-02 W	"	20	1015	78	68	71	9	7	080-7-7	77	21	075	211 10.5
0900	14-43 N	162-08 W	PT. CLD	20	1015	80	70	72	5	4	090-6-8	78	20	090	211 10.5
1000	14-35 N	162-13 W	"	20	1015	80	70	72	5	4	090-6-8	78	20	090	211 10.5
1100	14-25 N	162-19 W	"	20	1015	80	70	72	5	4	090-6-8	78	20	090	211 10.5
1200	14-17 N	162-24 W	"	20	1015	80	70	72	5	4	090-6-8	78	20	090	211 9.0
1300	14-10 N	162-28 W	"	20	1013	80	72	75	4	2	090-6-8	78	15	090	211 10.5
1400	14-00	162-32 W	"	20	1013	80	72	75	5	3	090-6-8	78	17	075	211 10.5
1500	13-51	162-40 W	"	20	1013	80	72	75	3	1	080-6-8	78	17	070	211 10.5
1600	13-42	162-44 W	"	20	1013	80	72	75	4	2	080-6-8	78	19	060	211 10.5
1700	13-35	162-55 W	"	20	1013	78	71	79	4	3	070-6-7	78	22	070	211 10.5
1800	13-26	163-01 W	"	20	1013	78	71	79	5	4	070-6-7	78	22	070	211 10.5
1900	13-17	163-07 W	CLOUDY	20	1013	78	71	79	6	5	070-6-7	78	22	070	209 10.5
2000	13-08	163-12 W	"	20	1013	78	71	79	8	6	070-6-7	79	20	070	209 10.5
2100	12-59 N	163-17 W	"	20	1014	79	71	79	9	8	070-6-8	79	22	070	209 10.5
2200	12-50 N	163-22 W	"	20	1014	79	71	79	9	8	070-6-8	79	22	070	209 10.5
2300	12-42 N	163-27 W	"	20	1014	79	71	79	9	8	070-6-8	79	22	070	209 10.5
2400	12-33 N	163-33 W	"	20	1014	79	71	79	9	8	070-6-8	79	22	070	209 10.5

REMARKS:

ALL TIMES LOCAL (^{XRAY}WISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

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DATE 27 Jan, 1966

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	12-23N	163-38W	Mostly Cldy	15	1013	78	72	83	7	7	070-6-8	79	22	060	208 10.5
0200	12-14N	163-43W	Ptly Cldy	15	1012	78	72	83	3	2	270-6-8	79	22	060	209 10.5
0300	12-05N	163-48W	" "	15	1012	78	72	83	5	3	270-6-8	79	22	060	209 10.5
0400	11-56N	163-54W	" "	15	1012	78	72	83	8	8	070-6-8	79	19	060	209 10.5
0500	11-49N	164-04W	" "	15	1012	77	74	87	8	7	060-6-8	79	19	050	209 10.5
0600	11-40N	164-11W	Cloudy	15	1013	77	75	91	9	8	060-6-8	79	19	050	209 10.5
0700	11-31N	164-16W	O'CAST	15	1013	77	76	95	10	10	060-6-8	79	19	050	206 10.5
0800	11-21N	164-20W	"	15	1013	77	76	95	10	10	070-6-7	79	20	070	206 10.5
0900	11-11N	164-25W	Cloudy	20	1013	82	75	80	6	5	070-6-7	79	15	070	206 10.5
1000	11-01N	164-30W	"	20	1013	82	75	81	6	5	070-6-6	79	15	070	206 10.5
1100	10-52N	164-34W	"	20	1013	82	75	80	6	5	070-6-6	79	15	070	206 10.5
1200	10-42N	164-39W	"	20	1013	82	75	80	6	5	070-6-6	79	15	070	206 10.5
1300	10-33N	164-48W	"	20	1011	82	74	76	8	7	070-6-6	79	15	070	206 10.5
1400	10-24N	164-46W	"	20	1010	85	74	76	7	6	070-6-6	79	18	060	206 10.5
1500	10-15N	164-51W	"	20	1010	82	75	80	8	6	070-6-6	79	17	060	206 10.5
1600	10-06N	164-57W	11/10 rain	20	1010	82	75	80	9	7	070-6-6	79	17	060	206 10.5
1700	10-02N	165-10W	PART Cldy	20	1010	82	78	88	5	4	065-6-8	80	13	090	303 10.5
1800	10-08N	165-19W	" "	20	1011	81	77	87	6	5	055-6-8	80	12	090	303 10.5
1900	10-13N	165-28W	" "	20	1011	81	77	87	6	5	055-6-8	80	12	090	303 10.5
2000	10-19N	165-37W	" "	20	1012	80	76	87	7	5	060-6-8	82	19	075	303 10.5
2100	10-25N	165-46W	" "	20	1013	79	75	91	6	5	070-6-8	82	20	070	305 10.5
2200	10-30N	165-55W	" "	20	1013	79	75	91	6	5	070-6-8	82	20	070	305 10.5
2300	10-36N	166-04W	" "	20	1013	79	75	91	5	5	070-6-8	82	20	070	305 10.5
2400	10-41N	166-13W	" "	20	1013	79	75	91	5	5	070-6-8	82	20	070	305 10.5

REMARKS:

^{XRAY}
 ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES;
 WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

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 12-5-63

DATE 28 Jan. 1966

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID%	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	10-47N	166-21W	Clear	15	1012	79	75	87	0	0	070-6-8	82	20	070	305 10.5
0200	10-52N	166-30W	Few Cls	15	1012	79	75	87	3	3	070-6-8	82	20	070	305 10.5
0300	10-57N	166-39W	" "	15	1012	79	75	87	1	1	070-6-8	82	20	070	305 10.5
0400	11-03N	166-48W	Partly Cls	15	1012	79	75	87	7	5	070-6-8	82	21	070	305 10.5
0500	11-04N	167-01W	" "	15	1012	79	75	87	6	5	060-6-8	82	22	070	305-10.5
0600	11-10N	167-10W	" "	20	1013	79	75	87	4	3	050-6-8	82	22	065	305-10.5
0700	11-15N	167-18W	" "	20	1013	79	75	87	5	3	050-6-8	82	24	065	305-10.5
0800	11-18N	167-28W	" "	20	1014	79	75	87	5	3	050-6-8	80	24	065	305-10.5
0900	11-22N	167-37W	" "	20	1014	80	74	83	5	4	070-6-8	80	25	070	310-10.5
1000	11-28N	167-45W	" "	20	1014	80	74	83	5	4	070-6-8	80	25	070	310-10.5
1100	11-32N	167-54W	" "	20	1014	80	74	83	5	4	070-6-8	80	25	070	310-10.5
1200	11-36N	168-04W	" "	20	1014	80	74	83	5	4	070-6-8	80	25	070	270-10.5
1300	11-42N	168-15W	Overcast	20	1012	80	76	87	10	9	070-6-8	80	25	070	310 10.5
1400	11-48N	168-23W	Partly Cls	20	1012	80	76	87	7	6	070-6-9	80	26	065	025 7
1500	11-43N	168-24W	" "	20	1012	78	72	83	5	4	070-6-9	80	25	065	025 7
1600	11-49N	168-21W	" "	20	1012	78	72	83	5	4	070-6-9	80	25	060	025 7
1700	11-54N	168-19W	" "	20	1012	78	72	83	5	4	060-5-9	82	26	060	025 6
1800	11-59N	168-17W	" "	20	1013	79	72	79	6	5	070-5-10	82	28	065	025 6
1900	12-05N	168-14W	" "	20	1013	79	72	79	7	6	070-5-10	82	28	065	025 6
2000	12-10.5N	168-11W	" "	20	1014	79	72	79	6	5	070-5-10	82	28	065	025 6
2100	12-21N	168-10W	Few Cls	20	1015	79	72	79	3	2	070-6-8	82	25	070	280 11.0
2200	12-21N	168-21W	" "	20	1015	79	72	79	3	2	070-6-8	82	25	070	270 11.0
2300	12-21N	168-32W	" "	20	1015	79	72	79	3	2	070-6-8	82	25	070	270 11.0
2400	12-21N	168-43W	" "	20	1015	79	72	79	3	2	070-6-8	82	20	070	270 11.0

REMARKS:

ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

SI-MNH-955
12-5-63

DATE 29 Jan. 1966

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	12-21N	168-55W	Pty Cldy	15	1014	79	70	75	3	2	070-6-8	82	15	070	270 11
0200	12-21N	169-06W	" "	15	1014	79	70	75	2	1	270-6-8	82	15	070	270 11
0300	12-21N	169-17W	" "	15	1014	79	70	75	1	0	270-6-8	82	17	070	270 11
0400	12-21N	169-28W	" "	15	1014	78	72	83	7	5	270-6-8	78	18	070	278 11
0500	12-23N	169-47W	" "	20	1013	78	72	83	8	7	060-6-9	80	24	055	270-12
0600	12-23N	169-59W	" "	20	1014	78	72	83	6	5	060-6-9	80	28	060	270-12
0700	12-23N	170-12W	" "	20	1015	78	72	83	5	4	060-6-9	80	24	060	270-12
0800	12-23N	170-25W	" "	20	1015	78	72	83	4	3	060-6-9	80	20	060	270-12
0900	12-23N	170-30W	Few Cldy	20	1015	79	72	79	3	2	070-6-8	80	20	070	000-10
1000	12-30N	170-30W	" "	20	1015	79	72	79	3	2	070-6-8	80	20	070	000-10
1100	12-43N	170-32W	" "	20	1015	79	72	79	3	2	080-6-8	80	20	070	000-10
1200	12-51N	170-40W	" "	20	1015	79	72	79	2	2	080-6-8	80	20	070	315 11
1300	12-54N	170-48W	" "	20	1014	78	72	83	3	1	080-6-8	80	20	070	315 11
1400	13-02N	170-55W	" "	20	1013	78	72	83	3	1	080-6-8	80	20	075	315 11
1500	13-10N	171-04W	" "	20	1012	78	72	83	2	1	080-6-8	80	20	075	315 11
1600	13-18N	171-11W	" "	20	1012	78	72	83	1	0	080-6-8	80	20	075	315 11
1700	13-20N	171-26W	PART Cldy	20	1012	78	72	83	3	2	060-6-8	80	16	045	315-11
1800	13-21N	171-37W	" "	20	1013	79	70	75	4	3	065-6-8	80	18	055	315-11
1900	13-28N	171-45W	" "	20	1013	79	70	75	5	4	070-6-8	80	20	055	315-11
2000	13-35N	171-53W	" "	20	1014	79	70	75	5	4	070-6-8	80	20	055	315-11
2100	13-43N	172-01W	Few Cldy	20	1015	79	70	75	3	2	070-6-8	80	15	060	315 11
2200	13-51N	172-08W	" "	20	1015	79	70	75	3	2	070-6-8	80	15	060	315 11
2300	14-01N	172-16W	" "	20	1016	79	70	75	3	2	070-6-8	80	15	060	315 11
2400	14-08N	172-25W	" "	20	1016	79	70	75	2	2	070-6-8	80	15	060	315 11

REMARKS:

ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

SI-MNH-955
12-5-63

DATE 30 Jan, 1966

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID %	TL SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	14-15 N	172-38 W	Pty Cldy	20	1015	78	69	75	3	1	070-6-8	80	16	070	315 11
0200	14-23 N	172-40 W	Pty Cldy	20	1014	78	69	75	2	1	070-6-8	80	15	070	315 U
0300	14-30 N	172-48 W	" "	20	1014	78	69	75	1	0	070-6-8	80	16	070	315 11
0400	14-34 N	172-42 W	" "	20	1014	78	69	75	3	2	070-6-8	80	16	070	056-8
0500	14-39 N	172-38 W	PART CLDY	20	1015	78	69	75	4	3	070-6-8	80	15	065	056-8
0600	14-43 N	172-31 W	" "	20	1015	78	69	75	4	3	070-6-8	80	14	065	056-8
0700	14-48 N	172-24 W	CLOUDY	20	1015	78	69	75	5	4	070-6-8	80	15	065	056-8
0800	14-52 N	172-17 W	" "	20	1016	79	72	79	5	4	070-6-8	80	17	065	056-8
0900	14-53 N	172-17 W	Pty Cldy	20	1017	80	68	68	4	4	070-6-6	80	12	070	056-8
1000	14-58 N	172-08 W	" "	20	1017	80	68	68	4	4	070-6-6	80	12	070	056-10
1100	15-04 N	172-01 W	" "	20	1017	80	68	68	4	4	070-6-6	80	12	070	056-10
1200	15-09 N	171-52 W	" "	20	1017	80	68	68	4	4	070-6-6	80	12	070	056-10
1300	15-16 N	171-44 W	" "	20	1015	80	70	72	2	1	070-6-6	80	14	070	056-10
1400	15-22 N	171-35 W	" "	20	1014	80	70	72	2	1	080-6-6	80	13	080	056-10
1500	15-28 N	171-25 W	" "	20	1014	80	70	72	4	2	080-6-6	80	13	080	056-10
1600	15-35 N	171-16 W	" "	20	1014	80	70	72	7	5	080-6-6	80	12	080	056-10
1700	15-40 N	171-13 W	" "	20	1014	79	70	72	5	4	080-6-5	80	12	080	056-10
1800	15-47 N	171-05 W	" "	20	1015	78	71	79	3	2	085-6-5	80	12	085	056-10
1900	15-53 N	170-57 W	CLEAR	20	1015	78	71	79	2	1	080-6-5	78	12	085	056-10
2000	15-58 N	170-48 W	" "	20	1015	78	71	79	1	0	080-6-5	78	12	085	060-10
2100	16-01 N	170-40 W	" "	20	1016	77	69	78	0	0	080-6-4	78	10	080	062-9
2200	16-07 N	170-32 W	" "	20	1016	77	69	78	0	0	080-6-4	78	10	080	062-9
2300	16-10 N	170-26 W	" "	20	1016	77	69	78	0	0	080-6-4	78	8	080	062-9
2400	16-14 N	170-18 W	" "	20	1016	77	69	78	0	0	080-6-4	78	8	080	062-9

REMARKS:

ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

SI-MNH-955

12-5-63

DATE 31 January 1966 A.D.

TIME	LAT	LONG	PRES WEA	VIS	SLP	DRY B	DEW PT	HUMID %	HT. SKY	OPA SKY	WAVES	SEA TEMP	WIND S	WIND D	SHIP COURSE/SPD.
0100	16-20N	170-08W	Few clbs	20	1016	78	72	83	2	1	080-6-4	78	10	050	062-10
0200	16-25N	169-59W	Part. clbs	20	1015	78	72	83	4	3	080-6-4	78	8	050	062-10
0300	16-30N	169-50W	" 4/10 in	10	1015	76	70	82	8	7	080-6-4	78	4	060	062-6
0400	16-35N	169-42W	Part. clbs	20	1015	76	70	82	6	4	080-6-4	78	10	065	062-6
0500															
0600															
0700															
0800															
0900															
1000															
1100															
1200															
1300															
1400															
1500															
1600															
1700															
1800															
1900															
2000	16-05N	169-49W	PART. CLD	20	1015	79	69	69.75	5	4	045-4	78	08	055	204-11
2100	15-55N	169-53W	" "	20	1016	78	69	69.75	4	3	045-4	78	10	060	204-11
2200	15-45N	169-58W	" "	20	1016	78	69	69.75	3	2	045-4	78	08	065	204-11
2300	15-35N	170-02W	" "	20	1016	78	69	69.75	5	4	045-4	78	09	055	204-11
2400	15-25N	170-06W	" "	20	1016	78	69	69.75	3	2	045-4	78	10	055	204-11

REMARKS:

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ALL TIMES LOCAL (WHISKEY); WIND DIR. IN WHOLE DEGREES; WIND SPEED IN KNOTS; TEMPERATURES IN FAHRENHEIT; VISIBILITY IN NAUTICAL MILES; WAVES IN WHOLE DEGREES; WAVE PERIOD IN SECONDS; WAVE HEIGHT IN WHOLE FEET; SEA LEVEL PRESSURE IN MILLIBARS

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12-5-63