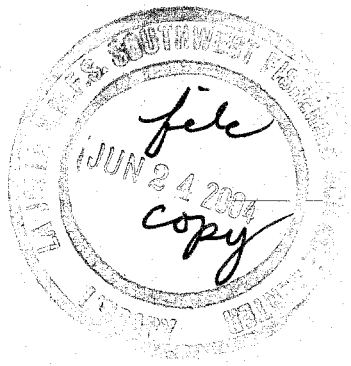


NOAA Technical Memorandum NMFS

MAY 1991

REPORT OF A MARINE MAMMAL SURVEY OF THE EASTERN TROPICAL PACIFIC ABOARD THE RESEARCH VESSEL *DAVID STARR JORDAN* JULY 28-DECEMBER 6, 1990

P. Scott Hill
Randall C. Rasmussen
Tim Gerrodette

NOAA-TM-NMFS-SWFSC-158

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southwest Fisheries Science Center

NOAA Technical Memorandum NMFS

The National Oceanic and Atmospheric Administration (NOAA), organized in 1970, has evolved into an agency which establishes national policies and manages and conserves our oceanic, coastal, and atmospheric resources. An organizational element within NOAA, the Office of Fisheries is responsible for fisheries policy and the direction of the National Marine Fisheries Service (NMFS).

In addition to its formal publications, the NMFS uses the NOAA Technical Memorandum series to issue informal scientific and technical publications when complete formal review and editorial processing are not appropriate or feasible. Documents within this series, however, reflect sound professional work and may be referenced in the formal scientific and technical literature.

NOAA Technical Memorandum NMFS

This TM series is used for documentation and timely communication of preliminary results, interim reports, or special purpose information; and have not received complete formal review, editorial control, or detailed editing.

MAY 1991

REPORT OF A MARINE MAMMAL SURVEY OF THE EASTERN TROPICAL PACIFIC ABOARD THE RESEARCH VESSEL *DAVID STARR JORDAN* JULY 28-DECEMBER 6, 1990

P. Scott Hill
Randall C. Rasmussen
Tim Gerrodette

National Oceanic and Atmospheric Administration
National Marine Fisheries Service
Southwest Fisheries Science Center
La Jolla. California 92038

NOAA-TM-NMFS-SWFSC-158

U.S. DEPARTMENT OF COMMERCE
Robert A. Mosbacher, Secretary
National Oceanic and Atmospheric Administration
John A. Knauss, Under Secretary for Oceans and Atmosphere
National Marine Fisheries Service
William W. Fox, Jr., Assistant Administrator for Fisheries

CONTENTS

LIST OF TABLES

LIST OF FIGURES

REPORT OF A MARINE MAMMAL SURVEY OF THE EASTERN TROPICAL PACIFIC ABOARD THE RESEARCH VESSEL DAVID STARR JORDAN JULY 28 - DECEMBER 6, 1990

P. Scott Hill
Randall C. Rasmussen
and
Tim Gerrodette

In 1984, as a result of an amendment to the Marine Mammal Protection Act of 1972, the National Marine Fisheries Service (NMFS) was mandated to conduct a research program to monitor trends in the abundance of stocks of dolphins in the eastern tropical Pacific (ETP). These dolphins are killed incidentally during fishing operations by the U. S. purse seine fishery for yellowfin tuna (Thunnus albacares). In 1986, the Southwest Fisheries Science Center (SWFSC) of the NMFS initiated a six-year program to monitor these stocks of dolphins. In the first four years of the program (1986 through 1989), two surveys of marine mammal populations in the ETP were conducted concurrently each year aboard the National Oceanic and Atmospheric Administration vessels David Starr Jordan and McArthur. The surveys lasted 120 days each. In 1990, the fifth pair of surveys was conducted during the same period of time and using the same vessels.

In this report, we describe the experimental procedures used during the surveys and we present summaries of the distance searched and marine mammals encountered from aboard the David Starr Jordan (Cruise DS-90-06 (229); SWFSC Observer Cruise 1369). A separate report of the McArthur cruise has been published by Hill et al. (1991). A report of environmental data collected during the survey is reported by Philbrick et al. (1991).

SURVEY OBJECTIVES

The primary objective of the cruise was to collect information to calculate relative abundance of dolphin species in the ETP that are taken incidentally by the purse seine fishery for yellowfin tuna. Specific objectives were to collect information to:

1. estimate school density, school size, and species composition of each species taken by the fishery;

2. calibrate observers' estimates of dolphin school size with counts of school sizes obtained from photographs taken from a ship-based helicopter;

3. investigate the physical and biological environment of the affected species; and

4. contribute to on-going U.S. and international programs investigating oceanography and ocean-atmosphere interactions in the ETP.

MATERIALS AND METHODS

Study Area and Itinerary

The David Starr Jordan, herein referred to as the Jordan, followed predetermined tracklines in the ETP from July 28 through December 6, 1990 (Figure 1), with scheduled port calls in Puerto Quetzal, Guatemala; Puerto Caldera, Costa Rica; and Manzanillo, Mexico. The itinerary of the vessel included four segments or effort legs:

Leg 1.			
	Departed	San Diego	July 28
	Arrived	Puerto Quetzal	August 26
Leg 2.			
	Departed	Puerto Quetzal	August 31
	Arrived	Puerto Caldera	September 29
Leg 3.			
	Departed	Puerto Caldera	October 4
	Arrived	Manzanillo	November 2
Leg 4.			
	Departed	Manzanillo	November 7
	Arrived	San Diego	December 6

The helicopter based on the Jordan conducted photographic censuses of California sea lion rookeries located on the following Mexican islands: Islas los Coronados (7/28), Isla San Jeronimo (7/29), Isla Cedros (7/30), Islas San Benitos (7/30), Isla Natividad (7/30), and Isla Margarita (8/1). Results of the photographic censuses will be published in a separate report.

The Jordan scientists conducted bird censuses on Isla Matuosa (Panama), Clipperton Island (France), and San Benedicto Island, (Mexico).

The Jordan experienced several problems throughout the survey which forced the vessel to make unplanned stops. The first unplanned stop occurred on August 2 in Cabo San Lucas, Mexico, in order to take on parts for the helicopter's fueling system. The only other departure from the itinerary was due to a breakdown of the fuel pump for the starboard main generator. This breakdown necessitated a repair period for the Jordan in Puerto Quetzal, Guatemala, from October 24 to October 28.

Scientific Personnel

Cruise Leaders	Legs
Andrew Dizon, SWFSC	1
Jim Gilpatrick, SWFSC	2
Scott Hill, NOAA Corps, SWFSC	3
Ed Cassano, NOAA Corps, SWFSC	4
Identification Specialists	
Richard LeDuc, SWFSC	1-2
Scott Benson, SWFSC	1-2
Jim Cotton, SWFSC	3-4
Gary Friedrichsen, SWFSC	3-4
Observers	
Jim Carretta, SWFSC	1-2
Darlene Everhart, SWFSC	1-2
Carrie LeDuc, SWFSC	1-2
Joe Raffetto, SWFSC	1-2
Wes Armstrong, SWFSC	3-4
Bill Irwin, SWFSC	3-4
Richard Rowlett, SWFSC	3-4
Brian Smith, SWFSC	3-4
Horacio DeAnda, Mexico	1
Robert Holland, SWFSC	2
Pablo Loreto, Mexico	4
Photogrammetry Specialists	
Mark Lowry, SWFSC	1
Jim Gilpatrick, SWFSC	2
Morgan Lynn, SWFSC	2-4
Robin Westlake, SWFSC	3-4
Bird Survey and Oceanographic Specialists	
Lisa Ballance, SWFSC	1-3
Robert Pitman, SWFSC	1-4
Valerie Philbrick, SWFSC	1-4
Gregg Thomas, Atl. Oceano. & Meter. Lab.	1-4
Jan Friedrichsen, contracted	4
Helicopter Support	
Miles Croom, NOAA Corps, OAO	1,3
Dave Gardner, NOAA Corps, OAO	2,4
Robert Pape, NOAA Corps, OAO	4
Ron Helgson, OAO	1-4

Marine Mammal Species Surveyed

During the survey, the observers recorded information on all species of whales and dolphins sighted throughout the cruise. However, encounter rates are presented only for dolphin species.

Equipment

The Jordan, commissioned in 1964, is 52.1 m in length, has a beam of 11.2 m, and has a 3.8 m draft. During the survey, the vessel maintained a cruising speed of approximately 18.5 km/hr.

Several pieces of equipment were used to gather data. The geographic position of the vessel was recorded periodically and at the time of a marine mammal sighting using the vessel's Satellite Navigation System (SATNAV). Marine mammals were detected with port and starboard pedestal mounted 25X Fuginon[1] binoculars and a variety of hand-held 7x50 binoculars. The 25X glasses were mounted on the upper deck approximately 10.7 m above the sea surface. Surface temperature and salinity, and temperature-depth profiles were obtained using a thermosalinograph and expendable bathythermographs (XBTs), respectively. Salinity and temperature profiles were obtained using a conductivity-temperature-depth (CTD) device. Water samples collected during these casts were analyzed for chlorophyll, oxygen, salinity, nutrients, and primary productivity (using a C-14 uptake method).

The bearing and radial distance from the vessel to each sighted marine mammal school was recorded. The bearing from the vessel to the school was recorded by the observers using a 360° graduated washer attached to the base of the 25X binoculars. The distance was determined by utilizing graduated reticles enclosed in the right eyepiece of the 25X binoculars.

Replicate angle and distance measurements to objects (buoys and points of land) were recorded opportunistically utilizing the 25X binoculars and the ship's radar. Analyses of these data will be covered in another report.

A 35 mm F-1 Canon[1] camera with motor drive was used to photograph animals to aid in stock and species identification. The system included 400 mm, 70-210 mm zoom, 50 mm, and 28 mm lenses. Some observers used personal camera equipment to photograph sightings as well. Animals were also recorded on 1.27 cm video tape using a Panasonic[1] VHS recorder and a Panasonic[1] camera equipped with telephoto lens.

---

[1]Reference to trade name does not imply endorsement by NMFS.

Duty Stations

Three duty stations were used during the survey, with observers rotating through each station.

1. Left Binocular - The port-side observer used a 25X binocular, mounted on the port side of the vessel, to scan the ocean for marine mammal sighting cues. The major area of responsibility for this observer was from the midpoint of the trackline to abeam the port side of the vessel and outward to the horizon or to the extent possible with prevailing environmental conditions.

2. Right Binocular - The starboard observer used a 25X binocular, mounted on the starboard side of the vessel, to search from the midpoint of the trackline to abeam the starboard side of the vessel, and outward to the horizon or to the extent possible with prevailing environmental conditions. Observers in the left and right positions frequently searched up to 10° on the opposite side of the trackline.

3. Recorder - The recorder's duties were to transcribe transect effort data at regular intervals, to make notes of information pertaining to each sighting, and to search the trackline adjacent to the vessel with hand held binoculars for schools not detected by the observers on the 25X glasses.

Observer Teams and Rotation

Two teams of three observers each alternately occupied the three duty stations. Each team was on duty for a two-hour shift. During each shift observers spent approximately equal time occupying each duty station. Teams alternated standing the first watch of the day.

Two of the six observers, one on each team, were experts in identifying marine mammals. Team composition remained constant during the entire survey. Team members rotated between the duty stations and teams rotated on and off duty without interrupting searching effort. Observers aboard the Jordan and McArthur switched vessels after the second leg, allowing school size estimates for all observers to be calibrated with the ship-based helicopter aboard the Jordan.

Data Collection Procedures

A typical day's searching activity began at sunrise, approximately 0630 hours local time, and ended at sunset, approximately 1830 hours local time. The searching procedure was initiated when observers were occupying the duty stations and a recorder was in place to record information on the Research Vessel Effort Form (Figure 2). Except for approximately two to three

hours per night when oceanographic data were collected, the vessel maintained its speed and course between sunset and sunrise to provide wider spatial distribution of searching effort.

When a sighting cue (marine mammals, birds, splashes, etc.) was detected, it was determined whether marine mammals were present and if the sighting was appropriate to approach. Generally, all marine mammal schools (dolphins and whales) encountered within 5.6 km lateral to the vessel were deemed as appropriate to turn on. For these schools, the searching effort was terminated and the vessel was directed to intersect the school. in order for the observers to obtain estimates of school size and species composition. The searching mode was resumed after the vessel returned to its original course and speed and the observers resumed searching for other sighting cues.

During each marine mammal sighting, the recorder collected data necessary to complete Research Vessel Effort and Research Vessel Sighting forms (Figure 3). Definition of each data element is given by Ralston[2]. Criteria for assigning sun position and sea state conditions are given in Figure 4 and Table 1, respectively. Observers recorded bearing and range to the mammals using the 360° washer and reticles etched into the right eyepiece of the 25X binoculars. The reticle measurements were converted to km using

$$a = 0.003942 \tan (\arctan (45242.52) - 0.001088\ r),$$

where a equals radial distance in km and r denotes the number of reticles below the topmost reticle. Values in this equation were calculated by Barlow (per. comm.) using an equation presented by Smith (1982) and data collected during previous research vessel cruises.

Each observer who had a good view of the school independently recorded, in his or her logbook, high, low and best estimates of school size and a determination of species composition. At no time were the observers allowed to discuss their estimates of school size and species composition. This procedure assured independence and consistency of each observer's data, and will allow individual correction factors to be developed from aerial photographs. On a daily basis the cruise leader (chief of the scientific party aboard the vessel) collected the individual logbooks and transcribed observer estimates of school size and species composition to complete the Research Vessel Sighting Forms.

All available observers, however, were allowed to discuss species identification and animal behavior, and a consensus was

---

[2]Ralston, F. Ms. Usage procedures and coding notes for research vessel sighting and effort records. Southwest Fisheries Center, P. O. Box 271, La Jolla, CA 92038.

entered on the Research Vessel Sighting and Research Vessel Continuation Forms (Figure 5) shortly after the time of a sighting. Species identifications were validated when possible by photographing the school at close range using 35 mm and video cameras.

During suitable sea states (Beaufort states 0 - 4) and visibility conditions, a Hughes[1] 500D helicopter was used to photograph dolphin schools. The photographs will be used to calibrate dolphin school size estimates made by shipboard observers. We used high resolution 5" format cameras with image motion compensation, which were designed by the Navy for low altitude reconnaissance. The cameras were forward motion compensated to eliminate loss of resolution caused by the movement of the aircraft.

Data Analyses

Sea state conditions were grouped into "calm" conditions, without whitecaps (Beaufort numbers 0-2) or "rough" conditions, with whitecaps (Beaufort numbers 3-5). The presence of whitecaps was important in searching for sighting cues. Animal splashes could not effectively be used as a sighting cue during rough seas because whitecaps were easily confused with the animal splashes.

Visibility conditions were classified into "good" and "poor" categories. Poor visibility conditions were recorded when horizontal sun position was 12 and vertical position was 1, 2, or 3, or when there were clouds together with fog or rain (Holt, 1987). All other conditions were good conditions.

The study area was divided into four strata, with the sum of the four strata comprising the total study area (Figure 1). The sum of the three northern most strata (inshore, middle and west) constitutes the northern stratum and represents the range of the northern offshore stock of spotted dolphins (the species most impacted by the purse-seine fishery). Data were analyzed using information by stratum, summed over strata and pooled over strata.

The rate of encountering marine mammal schools was determined as the simple ratio of sightings detected per 1000 km searched. The variance of the encounter rate was calculated as

$$\text{Var } (n/L) = [\Sigma l_i[(n_i/l_i) - (n/L)]^2]/L(R - 1)$$

where n equals the number of dolphin schools detected in the survey, L equals total thousands of km searched, l_i equals thousands of km searched during the ith day, n_i equals schools detected during the ith day, and R equals number of days searched.

Encounter rates were calculated for all dolphin schools that

were detected during Beaufort states 0 through 5. Rates were calculated for these schools detected in the entire study area and for schools stratified by area, calm and rough sea conditions, good and poor sun conditions, individual observers, and observer teams.

RESULTS

Data describing each leg of searching effort during the entire survey are summarized in Table 2. Information summarized for each marine mammal sighting encountered during the survey is presented in Table 3. The geographic positions of all schools detected during the survey are presented for each species category (code) in Figures 6 through 19. Observer estimates of school size are presented by species and subspecies in Table 4.

During the entire survey, observers searched 13,509 km and detected 593 marine mammal sightings (Table 5). Dolphins were detected in 396 schools and whales were detected in 209 schools (12 schools contained both dolphins and whales). These included 13 species of dolphins and 13 species of whales.

Searching effort was conducted during Beauforts 0 through 5 conditions. Generally, effort was terminated once the seas and wind attained a force of Beaufort 6. Effort was terminated at the discretion of the team leader and cruise leader. While operating in the searching mode in the study area (Figure 1) during Beauforts 0 through 5, 13,408 km were searched and 366 dolphin schools were detected. The overall rate of detecting schools in the study area was 27.30 schools/1000 km searched (Table 6).

The Jordan conducted the majority of its survey effort in the inshore and middle strata, in which 52% and 39% of the effort was concentrated, respectively. Only 9% of the Jordan's survey effort was distributed in the west and south regions. The detection rate in the inshore stratum was over two times the detection rate in any of the other three regions (Table 6). The west, south, and middle strata had similar detection rates.

Sea conditions in the study area were exceptionally rough this year. Only 10% of the searching effort was completed in calm seas (Table 6). However, 26% of all schools were detected during calm seas and the rate of detecting schools during calm seas was more than three times the rate detected during rough seas.

Poor visibility conditions occurred during only 13% of the surveying effort during which time 13% of the schools were detected (Table 6). The rate of detecting schools during poor conditions was slightly greater than the rate during good conditions (29.07 and 27.04 schools/1000 km searched, respectively).

Due to the mechanical repairs undertaken in Guatemala, the

observers aboard the vessel for the first two legs spent roughly four more days conducting survey effort than the observers aboard for the last two legs. However, all observers still spent approximately equal time searching (between 23 and 26% of the total distance searched).

The percent of all schools that were detected by each observer ranged from 6 to 14% (Table 6). Consequently, rates of detecting dolphin schools also varied considerably (range of 5.66 to 16.87 schools/1000 km).

The percentage of dolphin schools detected by each observer team ranged from 22 to 29% (Table 6). The rate of detecting schools by teams varied from 24.62 to 32.91 schools/1000km searched.

The ship-based helicopter flew for 97 hours during the entire survey period (Table 7). Of the 64 schools photographed, 38 were of adequate quality for use in the calibration of school size estimates made by the shipboard observers.

SUMMARY

In this report, we have presented data on dolphin encounter rates, school size, and species composition which meet the primary objectives of the cruise aboard the Jordan. Data on effort and sightings have been summarized. We found that the rate of encountering dolphin schools was much higher during calm seas than during rough seas, and the rate during good visibility conditions was slightly lower than the rate during poor visibility conditions. The rate was much higher in the inshore area than any of the other three areas. Encounter rates for individual observers and observer teams were variable.

ACKNOWLEDGEMENTS

The cruise aboard the Jordan was successfully executed due to the work of many dedicated professionals. Among those contributing to the success of the cruise were the marine mammal observers who spent many long hours collecting the data, the officers and crew of the NOAA Ship David Starr Jordan who gave their continuous support, and S. Ramsey (Jordan Port Captain) who provided liaison with ship support personnel. William Irwin and Scott Benson provided essential technical assistance with cruise preparations. Special efforts were provided in procurement by B. Engstrand and B. Watkins. Many of the figures were prepared by J. Tran. We are grateful to I. Barrett, R. Neal, D. DeMaster, R. Holt, and B. Remington for their support during the entire cruise preparation and execution. Special recognition is given to S. Sexton for her critical technical support and invaluable insights.

LITERATURE CITED

Bowditch, N. 1966. American practical navigator, an epitome of navigation. U. S. Naval Oceanographic Office. H. O. Pub. No. 9. Washington, DC. 1524 pp.

Hill, P. S., A. Jackson and T. Gerrodette. 1991. Report of a marine mammal survey of the eastern tropical Pacific aboard the research vessel McArthur July 28 - December 6, 1990. NOAA-TM NMFS-SWFSC-159. 142 pp.

Holt, R. S. 1987. Estimating density of dolphin schools in the eastern tropical Pacific Ocean by line transect methods. Fish. Bull. U. S. 85(3):419-434.

Philbrick, V. A., P. C. Fiedler, S. B. Reilly, R. L. Pitman, L. T. Ballance, G. G. Thomas, and D. W. Behringer. 1991. Report of ecosystem studies conducted during the 1990 eastern tropical Pacific dolphin survey on the research vessel David Starr Jordan. NOAA-TM-NMFS-SWFSC-160. 117 pp.

Smith, T. D. 1982. Testing methods of estimating range and bearing to cetaceans aboard the R/V David Starr Jordan. NOAA-TM-NMFS-SWFC-20. 20 pp.

Table 1. Sea state conditions measured by the Beaufort scale (from Bowditch, 1966).

Wind force (Beaufort)	Knots	Descriptive	Sea Conditions	Probable wave height in feet
0	0- 1	Calm	Sea smooth and mirror-like	-
1	1- 3	Light air	Scale-like ripple without foam crests	1/4
2	4- 6	Light breeze	Small short wavelets; crests have a glassy appearance and do not break	1/2
3	7-10	Gentle breeze	Large wavelets; some crests begin to break; foam of glassy appearance. Occasional white foam crests	2
4	11-16	Moderate breeze	Small waves, becoming longer; fairly frequent white foam crests	4
5	17-21	Fresh breeze	Moderate waves, taking a more pronounced long form; many white foam crests; there may be some spray	6
6	22-27	Strong breeze	Large waves begin to form; white foam crests are more extensive everywhere; there may be some spray	10

Table 2. Daily searching effort recorded in the eastern tropical Pacific aboard the David Starr Jordan during July 28 through December 6, 1990.

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
01	01	900803	17.96	67	56	69	01	02	4	257	21 54 n	114 09 w	5.09
01	02	900803	17.96	67	56	69	01	02	4	261	21 53 n	114 12 w	0.90
02	01	900803	17.96	71	77	55	01	03	3	259	21 48 n	114 13 w	5.99
02	02	900803	17.96	77	55	71	01	03	3	259			5.99
02	03	900803	17.96	55	71	77	01	03	3	259			4.19
02	04	900803	17.96	55	71	77	01	03	3	264	21 46 n	114 22 w	6.29
01	01	900804	18.52	69	67	56			3	255	21 36 n	115 53 w	9.26
01	02	900804	18.52	67	56	69			3	255			9.26
01	03	900804	18.52	56	69	67			3	255	21 34 n	116 04 w	9.26
01	04	900804	18.52	55	71	77			3	255	21 32 n	116 10 w	12.35
01	05	900804	18.52	71	77	55			3	255			12.96
01	06	900804	18.52	77	55	71			4	255			11.73
01	07	900804	18.52	69	67	56			4	255	21 28 n	116 31 w	12.35
01	08	900804	18.52	67	56	69			4	255			12.35
01	09	900804	18.52	56	69	67			4	255			12.35
01	10	900804	18.52	55	71	77			4	255	21 24 n	116 52 w	3.09
01	11	900804	18.52	55	71	77	12	12	3	255			3.40
02	01	900804	18.33	71	77	55	12	12	3	241	21 25 n	116 58 w	8.25
02	02	900804	18.33	71	77	55	12	12	4	241			1.53
02	03	900804	18.33	77	55	71	12	12	4	241			9.47
02	04	900804	18.33	69	67	56	12	01	4	241	21 20 n	117 08 w	6.11
02	05	900804	18.33	69	67	56	01	01	4	241			6.11
02	06	900804	18.33	67	56	69	01	01	4	241			7.64
02	07	900804	18.33	67	56	69	01	01	4	255	21 15 n	117 18 w	3.06
02	08	900804	18.33	67	56	69	02	01	4	206	21 15 n	117 20 w	1.53
02	09	900804	18.33	56	69	67	02	01	4	206			4.28
03	01	900804	17.59	55	71	77	02	01	4	200	21 10 n	117 24 w	9.38
03	02	900804	17.59	71	77	55	02	02	4	200			2.93
03	03	900804	17.96	71	77	55	02	02	4	205			5.39
03	04	900804	17.96	77	55	71	02	02	4	205	21 01 n	117 27 w	8.98
03	05	900804	17.96	69	67	56	02	02	4	205	20 56 n	117 29 w	5.99
03	06	900804	17.96	69	67	56	03	02	4	205			4.49
03	07	900804	17.96	67	56	69	03	02	4	205			6.89
04	01	900804	17.78	56	69	67	03	03	4	205	20 45 n	117 34 w	8.59
04	02	900804	17.78	56	69	67	03	03	4	205	20 41 n	117 36 w	0.30
01	01	900805	16.67	77	55	71			4	240	19 33 n	118 23 w	7.78
01	02	900805	16.67	55	71	77			4	240	19 30 n	118 28 w	8.61
01	03	900805	16.67	71	77	55			4	240			6.95
01	04	900805	16.67	56	69	67			4	240			11.11
01	05	900805	17.59	69	67	56			4	240	19 22 n	118 42 w	5.86
01	06	900805	17.59	69	67	56			4	240	19 19 n	118 45 w	1.47
01	07	900805	17.59	69	67	56	07	02	4	240			2.35
01	08	900805	17.59	69	67	56			4	240			2.05
01	09	900805	17.59	67	56	69			4	240			11.73
01	10	900805	17.59	77	55	71			3	240	19 15 n	118 54 w	11.73
01	11	900805	17.59	55	71	77			3	240			11.73
01	12	900805	18.89	71	77	55	07	01	3	240	19 08 n	119 06 w	12.59
01	13	900805	18.89	56	69	67	12	12	3	240	19 04 n	119 12 w	12.59

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
01	14	900805	18.89	69	67	56	12	12	3	240			6.30
02	01	900805	19.63	69	67	56	12	12	3	240	18 58 n	119 24 w	1.64
02	02	900805	19.63	67	56	69	12	12	3	240			3.60
03	01	900805	20.19	77	55	71	01	01	3	240	18 48 n	119 33 w	1.35
03	02	900805	20.19	77	55	71	11	01	3	320	18 48 n	119 35 w	2.69
03	03	900805	20.19	77	55	71	01	01	3	240	18 48 n	119 36 w	6.73
03	04	900805	20.19	55	71	77	01	01	3	240	18 48 n	119 39 w	10.09
03	05	900805	20.19	71	77	55	01	01	4	240			8.41
03	06	900805	20.19	71	77	55			4	330			1.68
03	07	900805	20.19	56	69	67	01	01	4	240	18 43 n	119 50 w	4.37
03	08	900805	16.67	56	69	67			4	254	18 42 n	119 51 w	4.72
03	09	900805	20.19	69	67	56			4	238	18 42 n	119 55 w	5.05
03	10	900805	20.19	69	67	56	01	02	4	238			5.05
03	11	900805	20.19	67	56	69	01	02	4	238	18 39 n	120 00 w	10.09
03	12	900805	20.19	77	55	71	01	02	4	238			12.45
03	13	900805	20.19	55	71	77	01	02	4	238			10.09
04	01	900805	20.56	71	77	55	01	03	4	238	18 29 n	120 17 w	5.48
05	01	900805	20.56	71	77	55			4	238	18 26 n	120 22 w	0.34
01	01	900806	17.96	67	56	69	06	03	4	238	17 44 n	121 41 w	10.78
01	02	900806	17.96	56	69	67	07	03	4	238			5.99
01	03	900806	17.96	56	69	67	07	02	4	238			3.29
01	04	900806	17.96	71	77	55	07	02	4	238	17 38 n	121 51 w	11.98
01	05	900806	17.96	77	55	71	07	02	4	238			11.98
01	06	900806	17.96	55	77	77	07	02	4	238			11.98
01	07	900806	17.96	67	56	69	07	01	4	238	17 29 n	122 09 w	11.98
01	08	900806	17.96	56	69	67	07	01	4	238			5.99
01	09	900806	17.96	56	69	67	07	01	4	238	17 23 n	122 18 w	5.99
01	10	900806	17.96	69	67	56	07	01	5	238			11.98
01	11	900806	17.96	71	77	55	07	12	5	238	17 18 n	122 27 w	11.98
01	12	900806	17.96	77	55	71	07	12	5	238			5.99
01	13	900806	18.15	77	55	71	07	12	5	241	17 13 n	122 35 w	6.05
01	14	900806	18.15	55	71	77	12	12	5	241			12.10
01	15	900806	18.15	67	56	69	12	12	5	241	17 08 n	122 44 w	12.10
01	16	900806	18.15	56	69	67	01	12	5	241			6.05
02	01	900806	18.89	69	67	56	01	01	5	239	17 02 n	123 00 w	4.72
02	02	900806	18.89	71	77	55	01	01	5	239	17 01 n	123 02 w	9.45
02	03	900806	18.89	77	55	71	01	02	5	239			9.45
02	04	900806	18.89	55	71	77	01	02	5	239	16 55 n	123 11 w	9.45
02	05	900806	18.89	67	56	69	01	02	5	239			7.24
03	01	900806	18.89	56	69	67	01	02	5	235	16 52 n	123 21 w	6.93
04	01	900806	18.52	69	67	56	02	03	5	235	16 47 n	123 27 w	10.19
04	02	900806	18.52	69	67	56	02	03	5	235	16 44 n	123 32 w	0.31
01	01	900807	18.52	55	71	77			4	235	15 55 n	124 52 w	2.16
02	01	900807	18.33	71	77	55			4	200	15 52 n	124 54 w	6.42
02	02	900807	18.33	71	77	55	08	03	4	200			2.75
02	03	900807	18.33	69	67	56			4	200	15 47 n	124 57 w	4.28
02	04	900807	18.33	69	67	56	08	02	4	200			7.95
02	05	900807	18.33	67	56	69	08	02	5	200			2.14
03	01	900807	19.08	56	69	67	08	02	5	200	15 35 n	125 05 w	9.54
03	02	900807	19.08	55	71	77			5	200	15 28 n	125 07 w	3.50
03	03	900807	19.08	55	71	77	08	02	5	200			9.22
03	04	900807	19.08	71	77	55	08	01	5	200			12.72
03	05	900807	19.08	77	55	71	08	01	5	200			12.72
03	06	900807	19.08	69	67	56	08	01	5	200	15 10 n	125 15 w	7.31

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
03	07	900807	19.08	69	67	56	09	12	5	200			5.40
03	08	900807	19.08	67	56	69	09	12	5	200			12.72
03	09	900807	19.08	56	69	67	12	12	5	200			12.72
03	10	900807	19.08	55	71	77	12	12	5	200	14 51 n	125 23 w	12.72
03	11	900807	19.08	71	77	55	02	01	5	200			12.72
03	12	900807	19.08	77	55	71	02	01	5	200			12.72
03	13	900807	19.08	69	67	56	02	01	5	200	14 33 n	125 32 w	9.54
03	14	900807	19.08	67	56	69	03	02	5	200			3.82
03	15	900807	19.08	67	56	69			5	200			5.72
03	16	900807	19.08	56	69	67			5	200	14 23 n	125 36 w	9.54
03	17	900807	19.08	55	71	77			5	200			12.72
03	18	900807	19.08	71	77	55			5	200	14 12 n	125 41 w	6.36
03	19	900807	19.08	71	77	55	03	02	5	200			4.77
03	20	900807	19.08	71	77	55	03	03	5	200			1.59
03	21	900807	19.08	77	55	71			5	200			12.72
03	22	900807	19.08	77	55	71			5	200	13 59 n	125 47 w	0.32
01	01	900808	18.33	56	69	67			5	200	12 18 n	126 29 w	9.17
01	02	900808	18.33	77	55	71			5	200	12 14 n	126 32 w	1.22
02	01	900808	18.89	77	55	71	08	02	5	200	12 11 n	126 34 w	6.30
02	02	900808	18.89	55	71	77			5	200			6.30
03	01	900808	18.33	56	69	67			5	200	11 45 n	126 40 w	0.92
04	01	900808	17.96	71	55	99	08	01	5	200	11 34 n	126 44 w	2.40
04	02	900808	17.96	77	55	71			5	200	11 33 n	126 44 w	7.78
04	03	900808	17.96	77	55	71			5	200	11 29 n	126 46 w	0.30
01	01	900809	14.63	71	77	55			5	145	09 15 n	125 12 w	0.98
01	02	900809	14.63	71	77	55	10	03	5	145			4.39
01	03	900809	14.63	77	55	71	10	03	5	145			4.39
01	04	900809	14.63	67	56	69	10	02	5	145	09 11 n	125 10 w	4.88
01	05	900809	14.63	56	69	67	10	02	5	145			4.88
01	06	900809	14.63	69	67	56	10	02	5	145			4.88
02	01	900809	17.59	71	77	55	10	02	5	145	08 59 n	124 56 w	8.50
02	02	900809	17.59	71	77	55	10	01	4	145			2.64
02	03	900809	17.59	77	55	71	10	01	4	145			11.14
02	04	900809	17.59	55	71	77	10	01	5	145			11.14
02	05	900809	17.59	67	56	69	10	01	5	145	08 45 n	124 45 w	11.73
02	06	900809	17.59	56	69	67	09	12	5	145			11.73
02	07	900809	17.59	69	67	56	09	12	5	145			2.93
02	08	900809	17.59	69	67	56	12	12	4	145			8.80
02	09	900809	17.59	71	77	55	05	12	4	145	08 31 n	124 33 w	11.73
02	10	900809	17.59	77	55	71	05	01	4	145			8.80
02	11	900809	17.59	77	55	71			4	145			2.93
02	12	900809	17.59	55	71	77	05	01	4	145			11.73
02	13	900809	17.59	67	56	69	05	01	4	145	08 16 n	124 21 w	4.40
02	14	900809	17.59	67	56	69			3	145			4.40
02	15	900809	17.59	56	69	67	05	01	3	145			4.11
02	16	900809	17.59	56	69	67			3	145	08 09 n	124 16 w	4.69
02	17	900809	17.59	69	67	56	05	02	3	145	08 08 n	124 15 w	8.80
02	18	900809	17.59	71	77	55			3	145			4.98
02	19	900809	17.59	71	77	55	05	02	3	145	08 02 n	124 09 w	2.35
02	20	900809	17.59	71	77	55			3	145			1.47
02	21	900809	17.59	71	77	55	05	02	3	145	07 59 n	124 08 w	2.64
02	22	900809	17.59	77	55	71	05	02	3	145			12.02
02	23	900809	17.59	55	71	77	05	03	3	145			0.88
03	01	900809	15.56	55	71	77	05	03	3	145	07 54 n	124 01 w	2.07

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
03	02	900809	15.56	55	71	77			3	145			1.81
03	03	900809	15.56	55	71	77			3	145	07 52 n	123 58 w	0.26
01	01	900810	18.89	69	67	56			2	141	06 39 n	123 00 w	2.52
02	01	900810	17.59	55	71	77			2	141	06 33 n	122 55 w	10.56
02	02	900810	17.59	71	77	55			2	141			11.44
02	03	900810	17.59	77	55	71			2	141			2.35
02	04	900810	17.59	77	55	71	10	02	2	141			7.92
03	01	900810	19.26	69	67	56	10	01	3	138	06 07 n	122 42 w	10.59
03	02	900810	19.26	55	71	77	10	01	3	138	06 02 n	122 38 w	12.84
03	03	900810	19.26	71	77	55			3	138			6.42
04	01	900810	18.71	77	55	71			2	138	05 48 n	122 28 w	5.30
04	02	900810	18.71	69	67	56			2	138	05 45 n	122 26 w	5.61
05	01	900810	17.22	67	56	69			1	134	05 38 n	122 26 w	8.61
05	02	900810	17.22	56	69	67			1	134			8.61
05	03	900810	17.04	55	71	77			1	130	05 30 n	122 21 w	5.68
06	01	900810	16.67	71	77	55			3	130	05 27 n	122 18 w	8.33
06	02	900810	16.67	77	55	71	05	02	3	130			8.33
06	03	900810	16.67	69	67	56			3	130			5.28
07	01	900810	17.04	67	56	69			2	130	05 13 n	122 06 w	2.84
07	02	900810	17.04	67	56	69			1	130			4.26
07	03	900810	17.04	67	56	69			2	130	05 11 n	122 03 w	2.84
07	04	900810	17.04	67	56	69			2	130	05 10 n	122 01 w	0.28
01	01	900811	14.45	77	55	71			4	140	04 10 n	121 02 w	0.96
02	01	900811	14.45	55	71	77			4	140	04 08 n	120 59 w	1.93
02	02	900811	17.04	56	69	67			4	140	04 08 n	120 58 w	2.84
02	03	900811	17.04	56	69	67	10	02	4	140			8.52
02	04	900811	17.04	69	67	56	10	02	4	140			5.68
02	05	900811	17.04	69	67	56			4	140	04 00 n	120 52 w	5.68
02	06	900811	17.04	67	56	69			4	140			11.36
02	07	900811	17.04	77	55	71	10	02	4	140	03 53 n	120 46 w	7.10
02	08	900811	17.04	77	55	71	10	01	5	140	03 50 n	120 44 w	5.11
02	09	900811	17.04	71	55	77	10	01	5	140	03 48 n	120 42 w	10.51
02	10	900811	17.04	71	77	55	09	01	5	140			3.98
02	11	900811	17.04	71	77	55			5	140	03 42 n	120 37 w	2.56
02	12	900811	17.04	71	77	55			5	140	03 40 n	120 36 w	1.70
02	13	900811	17.04	71	77	55	09	01	5	140			3.12
02	14	900811	17.04	56	69	67	09	01	5	140	03 38 n	120 34 w	5.68
02	15	900811	17.04	69	67	56	09	01	5	140			5.68
02	16	900811	17.04	67	56	69	09	01	5	140			5.68
03	01	900811	17.59	77	55	71	05	01	5	140	03 21 n	120 21 w	0.59
03	02	900811	17.59	77	55	71			5	140	03 21 n	120 21 w	5.86
03	03	900811	17.59	55	71	77			5	140			5.86
03	04	900811	17.59	71	77	55	05	01	5	140	03 16 n	120 17 w	5.28
04	01	900811	17.59	56	69	67	05	02	5	140	03 04 n	120 07 w	6.16
04	02	900811	17.78	67	56	69	05	02	5	140			4.74
04	03	900811	17.78	67	56	69	05	02	5	140	02 59 n	120 03 w	0.30
01	01	900812	15.56	67	56	69	10	03	4	135	01 42 n	119 00 w	6.48
01	02	900812	15.56	56	69	67	10	03	4	135			6.48
01	03	900812	15.56	71	77	55	10	03	5	135	01 37 n	118 56 w	10.63
01	04	900812	15.56	77	55	71	10	02	5	135			10.37
01	05	900812	15.56	55	71	77			5	135			2.07
01	06	900812	15.56	55	71	77	10	02	5	135	01 27 n	118 46 w	8.04
01	07	900812	15.56	67	56	69	10	01	5	135	01 23 n	118 41 w	10.37
01	08	900812	15.56	56	69	67	10	01	5	135			5.19

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
01	09	900812	15.56	56	69	67	10	01	5	135	01 17 n	118 38 w	5.19
01	10	900812	15.56	69	67	56	10	01	5	135			10.37
01	11	900812	15.56	71	77	55	09	01	5	135	01 11 n	118 32 w	5.19
01	12	900812	15.56	77	55	71	09	01	5	135			5.19
01	13	900812	15.56	55	71	77	08	12	5	135			5.19
02	01	900812	15.56	67	56	69	07	01	5	085	00 55 n	118 14 w	5.19
02	02	900812	15.56	56	69	67	07	01	5	085			5.19
02	03	900812	15.56	69	67	56	07	01	5	085			5.19
02	04	900812	15.56	71	77	55	07	02	5	085	00 55 n	118 05 w	7.78
02	05	900812	15.56	77	55	71	07	02	5	085			7.78
02	06	900812	15.56	55	71	77	07	02	5	085	00 56 n	117 56 w	7.78
02	07	900812	15.56	67	56	69	07	02	4	085			6.74
02	08	900812	17.22	67	56	69	07	02	4	089			1.15
02	09	900812	17.22	56	69	67	07	02	4	089	00 57 n	117 48 w	10.91
02	10	900812	17.22	69	67	56	07	03	4	089			1.72
02	11	900812	17.22	69	67	56	07	03	4	089	00 57 n	117 40 w	0.29
01	01	900813	17.41	55	71	77	11	03	4	094	00 57 n	116 08 w	6.38
01	02	900813	17.41	71	77	55	11	03	4	094			6.38
01	03	900813	17.41	77	55	71	11	03	4	094			6.09
01	04	900813	17.41	69	67	56	11	02	4	094	00 57 n	115 58 w	11.61
01	05	900813	17.41	67	56	69	11	02	4	094			11.61
01	06	900813	17.41	56	69	67	11	02	4	094			1.74
02	01	900813	17.96	56	69	67	11	01	4	094	00 56 n	115 41 w	2.40
02	02	900813	17.96	55	71	77	11	01	4	094	00 56 n	115 41 w	11.98
02	03	900813	17.96	71	77	55	11	01	4	094			11.98
02	04	900813	17.96	77	55	71	11	01	4	094			11.98
02	05	900813	17.96	69	67	56	11	01	4	094	00 55 n	115 21 w	8.98
02	06	900813	17.96	69	67	56	10	12	4	094			2.99
02	07	900813	17.96	67	56	69	10	12	4	094			11.98
02	08	900813	17.96	56	69	67	12	12	4	094			11.98
02	09	900813	17.96	55	71	77			4	094	00 54 n	115 02 w	6.59
02	10	900813	17.96	55	71	77			4	090	00 53 n	114 58 w	5.39
02	11	900813	17.96	71	77	55			4	090			10.18
03	01	900813	17.59	77	55	71	07	02	4	090	00 53 n	114 49 w	2.05
03	02	900813	17.59	69	67	56	07	02	4	090	00 53 n	114 48 w	4.40
03	03	900813	17.59	69	67	56			4	090			4.40
03	04	900813	17.59	67	56	69			4	090			8.80
03	05	900813	17.59	56	69	67			4	090	00 54 n	114 39 w	8.80
03	06	900813	17.59	55	71	77			4	090			7.33
03	07	900813	17.59	71	77	55			4	090			1.47
03	08	900813	17.59	71	77	55			4	090	00 54 n	114 28 w	6.74
03	09	900813	17.59	71	77	55			4	090	00 54 n	114 24 w	0.29
01	01	900814	15.93	56	69	67	12	03	4	088	00 52 n	112 54 w	7.43
01	02	900814	15.93	69	67	56	12	03	4	088			7.43
02	01	900814	15.74	67	56	69	11	02	4	088	00 52 n	112 46 w	2.10
02	02	900814	16.67	67	56	69	01	02	4	045			2.50
02	03	900814	16.67	77	55	71	01	02	4	045	00 52 n	112 43 w	11.39
02	04	900814	16.67	55	71	77	01	02	4	045			10.83
02	05	900814	16.67	71	77	55	01	02	4	045			11.11
02	06	900814	16.67	56	69	67	01	01	4	045	01 07 n	112 31 w	3.61
02	07	900814	14.45	56	69	67	11	01	4	100	01 08 n	112 29 w	6.50
02	08	900814	14.45	69	67	56	11	01	4	100			9.63
02	09	900814	14.45	67	56	69	11	01	5	100			9.63
02	10	900814	14.45	77	55	71	10	01	5	100	01 07 n	112 16 w	9.63

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
02	11	900814	14.45	55	71	77	08	12	5	100			9.63
02	12	900814	14.45	71	77	55	08	12	5	100			7.46
02	13	900814	13.89	71	77	55	07	01	5	095	01 05 n	112 02 w	2.08
02	14	900814	13.89	56	69	67	07	01	5	095	01 05 n	112 01 w	9.26
02	15	900814	13.89	69	67	56	07	01	5	095			4.63
02	16	900814	13.89	69	67	56	07	01	5	095	01 05 n	112 54 w	4.63
02	17	900814	13.89	67	56	69	06	01	5	095			9.26
02	18	900814	13.89	77	55	71	06	02	5	095	01 05 n	111 47 w	6.94
02	19	900814	13.89	55	71	77	06	02	5	095			6.95
02	20	900814	13.89	71	77	55	06	02	5	095	01 05 n	111 40 w	6.94
02	21	900814	13.89	56	69	67	06	02	5	095			4.63
02	22	900814	13.89	69	67	56	06	03	5	095			4.63
02	23	900814	13.89	67	56	69	06	03	5	095			4.17
02	24	900814	13.89	67	56	69	06	03	5	095	01 04 n	111 29 w	0.23
01	01	900815	12.22	71	77	55			5	095	01 00 n	110 26 w	5.30
01	02	900815	12.22	71	77	55			5	095			1.63
01	03	900815	12.22	77	55	71			5	095			7.13
01	04	900815	12.22	55	71	77	11	03	5	095			2.44
01	05	900815	12.22	55	71	77	11	02	5	095			2.44
01	06	900815	12.22	55	71	77	11	02	5	095			1.22
01	07	900815	12.22	67	56	69	11	02	5	095	00 59 n	110 15 w	2.04
01	08	900815	12.22	67	56	69			5	095			2.04
01	09	900815	12.22	56	69	67			5	095			2.85
01	10	900815	12.22	56	69	67	11	02	5	095			1.22
01	11	900815	12.22	69	67	56	11	02	5	095			1.22
01	12	900815	12.22	69	67	56			5	095			2.85
02	01	900815	12.96	71	77	55			5	095	00 58 n	110 01 w	7.35
02	02	900815	12.96	71	77	55	11	01	5	095			1.30
02	03	900815	12.96	77	55	71			5	095			3.89
03	01	900815	14.08	55	71	77			5	095			7.51
03	02	900815	14.08	67	56	69			5	095	00 55 n	109 49 w	5.63
03	03	900815	14.08	67	56	69			5	090			3.75
03	04	900815	14.08	56	69	67			5	090			4.69
03	05	900815	14.08	56	69	67			5	090	00 55 n	109 42 w	4.69
03	06	900815	14.08	69	67	56	07	01	5	090			9.38
03	07	900815	14.08	71	77	55	07	01	5	090	00 55 n	109 34 w	9.38
03	08	900815	14.08	77	55	71	07	01	5	090			7.51
03	09	900815	14.08	77	55	71			5	090			2.35
03	10	900815	14.08	55	71	77			5	090			7.27
03	11	900815	14.08	55	71	77			4	090			1.64
03	12	900815	14.08	67	56	69			4	090	00 55 n	109 19 w	7.04
03	13	900815	14.08	56	69	67			4	090			7.04
03	14	900815	14.08	69	67	56			4	090	00 55 n	109 11 w	7.04
03	15	900815	14.08	71	77	55			4	090			4.69
03	16	900815	14.08	77	55	71			4	090			4.69
03	17	900815	14.08	77	55	71			4	090	00 56 n	109 01 w	0.23
01	01	900816	14.63	69	67	56			4	090	00 57 n	107 48 w	8.29
01	02	900816	14.63	67	56	69			4	090			7.80
01	03	900816	14.63	56	69	67			4	090			5.12
01	04	900816	14.63	56	69	67			4	090			2.68
01	05	900816	14.63	55	71	77			4	090	00 55 n	107 37 w	2.68
01	06	900816	14.63	55	71	77			4	090			7.07
01	07	900816	14.63	71	77	55			4	090			4.88
01	08	900816	14.63	71	77	55	11	02	4	090	00 57 n	107 25 w	4.88

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
01	09	900816	14.63	77	55	71	11	02	4	090			5.36
01	10	900816	14.63	77	55	71	11	01	4	090			4.39
01	11	900816	14.63	69	67	56	11	01	4	090	00 57 n	107 17 w	2.93
01	12	900816	14.63	69	67	56			4	090			3.17
01	13	900816	14.63	69	67	56	11	01	4	090			3.66
01	14	900816	14.63	67	56	69	11	01	4	090			2.68
02	01	900816	13.89	67	56	69	11	01	4	090	00 56 n	107 10 w	0.93
02	02	900816	13.89	56	69	67	11	01	4	090			2.31
03	01	900816	13.15	55	71	77	08	12	4	090	00 57 n	107 07 w	2.85
03	02	900816	13.15	55	71	77	08	12	4	093	00 57 n	107 06 w	2.63
03	03	900816	13.15	71	77	55	07	01	4	093			1.31
04	01	900816	13.33	77	55	71	07	01	4	093	00 57 n	107 02 w	4.22
05	01	900816	15.19	69	67	56	07	01	4	093	00 57 n	106 58 w	8.86
05	02	900816	15.19	67	56	69	06	01	4	093			4.05
05	03	900816	15.19	67	56	69	06	01	4	095	00 58 n	106 50 w	5.32
05	04	900816	15.19	56	69	67	06	02	4	095	00 58 n	106 46 w	8.35
05	05	900816	15.19	55	71	77	06	02	4	095			7.59
05	06	900816	15.19	71	77	55			4	095			2.78
05	07	900816	15.19	71	77	55	06	02	4	095			5.06
05	08	900816	15.19	77	55	71	06	02	4	095	00 57 n	106 34 w	7.34
05	09	900816	15.19	69	67	56	06	03	4	095			5.06
05	10	900816	15.19	67	56	69	06	03	4	095			2.53
05	11	900816	15.19	67	56	69	06	03	4	095	00 57 n	106 24 w	0.25
01	01	900817	17.59	77	55	71			4	018	02 27 n	106 05 w	12.02
01	02	900817	17.59	55	71	77	02	03	4	018	02 32 n	106 05 w	4.69
01	03	900817	17.59	55	71	77			4	018	02 35 n	106 04 w	3.81
01	04	900817	17.59	55	71	77	02	02	4	018			2.64
01	05	900817	17.59	71	77	55	02	02	4	018			11.14
01	06	900817	17.59	56	69	67	02	02	5	018	02 44 n	106 01 w	11.73
01	07	900817	17.59	69	67	56	02	02	5	018			7.62
01	08	900817	17.59	69	67	56			5	018			4.11
01	09	900817	17.59	67	56	69			5	018			11.73
01	10	900817	17.59	77	55	71			4	018	03 04 n	105 54 w	12.02
01	11	900817	17.59	55	71	77			4	018			6.16
01	12	900817	18.52	55	71	77			4	013	03 14 n	105 51 w	5.86
01	13	900817	18.52	71	77	55	01	12	4	013			7.41
01	14	900817	18.52	71	77	55			4	013			4.63
01	15	900817	18.52	56	69	67			4	013	03 23 n	105 49 w	6.17
01	16	900817	18.71	56	69	67	12	12	4	000	03 27 n	105 48 w	6.24
01	17	900817	18.71	69	67	56	12	12	4	000			3.12
01	18	900817	18.71	69	67	56			4	000			3.12
01	19	900817	18.71	69	67	56			4	000	03 33 n	105 48 w	3.12
01	20	900817	18.71	69	67	56	10	01	4	000			3.12
01	21	900817	18.71	67	56	69	10	01	4	000			12.47
01	22	900817	18.71	77	55	71			4	000	03 44 n	105 48 w	12.47
01	23	900817	18.71	55	71	77			4	000	03 49 n	105 48 w	12.47
01	24	900817	18.71	71	77	55			4	000			4.36
02	01	900817	16.30	71	77	55			4	000	04 01 n	105 46 w	2.72
02	02	900817	16.30	56	69	67			4	000	04 01 n	105 46 w	5.98
03	01	900817	17.04	69	67	56			4	000	04 06 n	105 47 w	0.85
04	01	900817	17.59	67	56	69			4	000	04 11 n	105 47 w	4.98
04	02	900817	17.59	77	55	71			4	000	04 13 n	105 47 w	4.69
04	03	900817	17.59	77	55	71			4	000			2.93
04	04	900817	17.59	77	55	71			4	000	04 18 n	105 46 w	0.29

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
01	01	900818	15.37	67	56	69			5	322	05 51 n	105 51 w	3.07
02	01	900818	19.45	56	69	67			5	322	05 56 n	105 55 w	10.70
02	02	900818	19.45	69	67	56			5	322			11.02
02	03	900818	19.45	71	77	55			4	322	06 05 n	106 02 w	4.21
02	04	900818	19.45	71	77	55	04	02	4	322			4.54
02	05	900818	19.45	71	77	55	04	02	5	322			4.21
02	06	900818	19.45	77	55	71	04	02	5	322			4.21
02	07	900818	19.45	77	55	71	04	01	5	322			6.48
02	08	900818	19.45	77	55	71	04	01	4	322			2.27
02	09	900818	19.45	55	71	77			4	322			12.96
02	10	900818	19.45	67	56	69	04	01	5	322	06 23 n	106 15 w	9.72
02	11	900818	19.45	67	56	69			4	322			3.24
02	12	900818	19.45	56	69	67	03	01	4	322			12.96
02	13	900818	19.45	69	67	56	03	12	4	322			7.13
02	14	900818	19.45	69	67	56	03	12	4	322			2.59
02	15	900818	19.45	69	67	56			4	322			3.24
02	16	900818	19.45	71	77	55			4	322	06 42 n	106 29 w	2.59
03	01	900818	20.37	71	77	55			4	322	06 46 n	106 32 w	2.72
03	02	900818	20.37	77	55	71	11	01	4	322			10.19
03	03	900818	20.37	77	55	71	11	01	4	322			3.40
03	04	900818	20.37	55	71	77	11	01	4	322			13.58
03	05	900818	20.37	67	56	69	11	01	4	322	06 59 n	106 42 w	13.58
03	06	900818	20.37	56	69	67	11	01	4	322			13.58
03	07	900818	20.37	69	67	56	11	02	4	322			13.58
03	08	900818	20.37	71	77	55	11	02	4	322	07 16 n	106 54 w	10.19
03	09	900818	20.37	77	55	71	11	02	4	322			6.11
03	10	900818	20.37	77	55	71			4	322			4.07
03	11	900818	20.37	55	71	77			4	322	07 26 n	107 01 w	10.19
03	12	900818	20.37	67	56	69			4	322			8.49
03	13	900818	20.37	67	56	69			4	322	07 34 n	107 06 w	0.34
01	01	900819	18.52	55	71	77			4	318	09 13 n	108 23 w	10.80
01	02	900819	18.52	71	77	55			4	318			5.56
01	03	900819	18.52	71	77	55	04	02	4	318			3.09
01	04	900819	18.52	71	77	55			4	318			1.85
01	05	900819	18.52	77	55	71			4	318			10.49
01	06	900819	18.52	69	67	56	04	02	4	318	09 27 n	108 35 w	6.17
01	07	900819	18.52	69	67	56			4	318			6.17
01	08	900819	18.52	67	56	69			4	318			4.01
01	09	900819	18.52	67	56	69			4	318			5.86
01	10	900819	18.52	67	56	69			4	318			2.47
01	11	900819	18.52	56	69	67	04	01	4	318			8.64
01	12	900819	18.52	56	69	67	04	01	4	318			3.70
01	13	900819	18.52	55	71	77	04	01	4	318	09 40 n	108 48 w	12.35
01	14	900819	18.52	71	77	55			4	318			8.64
01	15	900819	18.52	71	77	55			5	325	09 53 n	108 54 w	3.70
01	16	900819	18.52	77	55	71			5	325			9.26
02	01	900819	18.15	69	67	56	12	12	4	318	10 01 n	108 57 w	6.05
02	02	900819	18.15	69	67	56	12	12	4	318	10 03 n	109 00 w	3.93
02	03	900819	18.15	67	56	69			4	318			6.05
02	04	900819	18.15	67	56	69			4	318	10 07 n	109 03 w	0.30
01	01	900820	15.00	56	69	67			4	025	11 12 n	108 48 w	8.00
01	02	900820	15.00	69	67	56			4	025			1.25
01	03	900820	15.00	69	67	56			4	025			6.75
01	04	900820	15.00	67	56	69			4	025			3.25

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
01	05	900820	15.00	67	56	69			4	025			1.25
02	01	900820	18.52	56	69	67			3	025	11 48 n	108 31 w	11.73
03	01	900820	18.15	69	67	56			3	025	11 56 n	108 27 w	1.81
04	01	900820	17.59	77	55	71			4	029	12 44 n	108 02 w	7.04
04	02	900820	17.59	55	71	77			4	029	12 47 n	108 01 w	2.93
04	03	900820	17.59	55	71	77			4	029			4.40
04	04	900820	17.59	56	69	67			4	029			1.47
04	05	900820	17.59	56	69	67			4	029	12 52 n	107 58 w	0.29
01	01	900821	18.15	71	77	55			5	102	14 09 n	106 17 w	4.54
01	02	900821	18.15	71	77	55	12	01	5	102	14 08 n	106 15 w	1.81
01	03	900821	18.15	77	55	71	12	01	5	102			5.75
01	04	900821	18.15	55	71	77	12	01	5	102			6.65
01	05	900821	18.15	71	77	55	12	12	4	102			6.35
01	06	900821	18.15	77	55	71	12	12	4	102			9.68
01	07	900821	18.15	67	56	69	12	12	4	102	14 03 n	106 00 w	12.40
01	08	900821	18.15	56	69	67	12	12	4	102			11.80
01	09	900821	18.15	69	67	56	06	01	4	102			12.10
01	10	900821	18.15	71	77	55	06	01	4	102	13 57 n	105 40 w	6.65
01	11	900821	18.15	71	77	55	06	01	3	102			5.75
01	12	900821	18.15	77	55	71	06	01	3	102			8.47
01	13	900821	18.15	77	55	71	06	01	2	102	13 54 n	105 29 w	0.91
02	01	900821	18.89	55	71	77	06	02	2	102	13 51 n	105 30 w	2.83
02	02	900821	18.89	67	56	69	06	02	2	102	13 51 n	105 28 w	4.09
03	01	900821	17.22	56	69	67	06	02	2	102	13 48 n	105 21 w	6.03
03	02	900821	17.22	69	67	56	06	02	2	102			4.31
03	03	900821	17.22	69	67	56	06	03	2	102			1.44
03	04	900821	17.22	71	77	55	06	03	2	102			6.03
03	05	900821	17.22	77	55	71			2	102			6.89
03	06	900821	17.22	77	55	71			2	102	13 44 n	105 07 w	0.29
01	01	900822	15.37	69	67	56	11	03	2	105	13 22 n	103 47 w	3.33
02	01	900822	16.11	67	56	69	11	03	3	105	13 23 n	103 45 w	10.47
02	02	900822	16.11	56	69	67	11	02	3	105			9.67
02	03	900822	16.11	55	71	77	11	02	3	105	13 21 n	103 33 w	11.82
02	04	900822	16.11	71	77	55	11	01	3	105			4.30
02	05	900822	16.11	71	77	55	11	01	4	105	13 18 n	103 23 w	5.37
02	06	900822	16.11	77	55	71	11	01	4	105			3.49
03	01	900822	16.85	69	67	56	12	12	4	105	13 07 n	103 11 w	2.25
04	01	900822	17.04	55	71	77	12	12	4	105	13 07 n	103 08 w	11.36
04	02	900822	17.04	71	77	55	05	12	4	105			11.36
04	03	900822	17.04	77	55	71	05	01	4	105			11.36
04	04	900822	17.04	69	67	56	06	01	4	105	13 01 n	102 47 w	11.36
04	05	900822	17.04	67	56	69	06	01	3	105			5.68
04	06	900822	17.04	67	56	69	06	01	3	105	12 58 n	102 39 w	5.68
04	07	900822	17.04	56	69	67	06	02	3	105			1.42
05	01	900822	16.30	56	69	67	06	02	3	105	12 57 n	102 34 w	6.79
05	02	900822	16.30	55	71	77	06	02	3	105	12 56 n	102 26 w	4.89
06	01	900822	17.59	71	77	55	06	02	3	105	12 54 n	102 26 w	2.64
06	02	900822	17.59	71	77	55			3	105			6.16
06	03	900822	17.59	77	55	71			3	105	12 53 n	102 22 w	0.88
01	01	900823	14.08	77	55	71			3	103	12 29 n	100 45 w	3.05
01	02	900823	14.08	77	55	71	11	03	3	103			7.27
01	03	900823	14.08	55	71	77	11	03	3	103			9.85
01	04	900823	14.08	71	77	55	11	02	3	103			4.22
01	05	900823	14.08	71	77	55	11	02	2	103			4.69

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
02	01	900823	17.04	56	69	67			2	110	12 23 n	100 22 w	2.27
03	01	900823	17.04	56	69	67			2	110	12 22 n	100 20 w	3.41
04	01	900823	17.04	69	67	56	11	01	2	110	12 22 n	100 18 w	8.24
04	02	900823	17.04	77	55	71			3	110	12 21 n	100 14 w	9.94
04	03	900823	17.04	77	55	71			2	110			1.42
04	04	900823	17.04	55	71	77			2	110			11.36
04	05	900823	17.04	71	77	55			2	110	12 16 n	100 03 w	3.98
04	06	900823	17.04	71	77	55			2	094	12 15 n	100 00 w	7.38
04	07	900823	17.04	56	69	67			2	094	12 15 n	099 55 w	4.26
04	08	900823	17.04	56	69	67	12	12	2	094			2.56
04	09	900823	17.04	56	69	67			2	094			2.56
05	01	900823	17.41	69	67	56			3	094	12 14 n	099 44 w	4.64
05	02	900823	17.41	69	67	56			3	094	12 14 n	099 42 w	2.32
05	03	900823	17.41	67	56	69			3	094			6.38
05	04	900823	17.41	77	55	71			3	094	12 14 n	099 37 w	3.48
05	05	900823	17.41	77	55	71	06	01	2	094	12 14 n	099 35 w	3.77
05	06	900823	17.41	77	55	71			3	094	12 15 n	099 33 w	4.35
05	07	900823	17.41	55	71	77			3	094			5.80
05	08	900823	17.41	55	71	77			3	100	12 16 n	099 27 w	1.16
06	01	900823	17.04	56	69	67	06	02	3	100	12 18 n	099 24 w	8.52
06	02	900823	17.04	69	67	56	06	02	3	100			1.70
06	03	900823	17.04	69	67	56			3	100			3.12
06	04	900823	17.04	69	67	56			2	100			3.69
06	05	900823	17.04	67	56	69			2	100	12 18 n	099 15 w	8.52
06	06	900823	17.04	77	55	71			2	100	12 17 n	099 10 w	3.41
06	07	900823	17.04	77	55	71			2	100	12 17 n	099 08 w	0.28
01	01	900824	14.63	67	56	69			3	096	12 07 n	097 44 w	4.63
02	01	900824	12.96	56	69	67			3	096	12 03 n	097 41 w	0.65
03	01	900824	13.89	69	67	56			2	096	12 02 n	097 40 w	3.70
03	02	900824	13.89	71	77	55			2	096	12 01 n	097 38 w	6.94
03	03	900824	13.89	71	77	55	12	02	2	096			2.31
03	04	900824	13.89	77	55	71	12	02	2	096			0.69
03	05	900824	16.11	77	55	71	01	02	2	050			9.94
03	06	900824	16.11	55	71	77	01	01	2	050			4.03
03	07	900824	16.11	55	71	77	01	01	2	050			3.76
03	08	900824	16.11	55	71	77	01	01	2	050	12 06 n	097 20 w	1.88
03	09	900824	16.11	55	71	77	01	01	2	050			1.07
03	10	900824	16.48	67	56	69	12	01	2	096	12 07 n	097 18 w	2.75
04	01	900824	16.67	67	56	69	12	01	2	096	12 05 n	097 16 w	3.61
04	02	900824	16.67	56	69	67	12	01	2	096			11.11
04	03	900824	16.67	69	67	56	12	01	2	096			6.94
04	04	900824	16.67	69	67	56	12	12	1	096			4.17
04	05	900824	16.67	71	77	55	12	12	1	096	12 02 n	097 01 w	1.39
05	01	900824	17.41	71	77	55	12	12	1	096	12 04 n	096 55 w	3.48
06	01	900824	17.59	71	77	55			1	080	12 03 n	096 53 w	2.05
06	02	900824	17.59	77	55	71			1	080			3.52
07	01	900824	17.96	77	55	71			2	080			3.59
07	02	900824	17.96	55	71	77			2	080	12 03 n	096 47 w	7.49
07	03	900824	17.96	67	56	69			2	080	12 04 n	096 42 w	4.49
07	04	900824	17.96	67	56	69			3	080			7.49
07	05	900824	17.96	56	69	67	06	01	3	080			5.39
08	01	900824	16.30	71	77	55			3	080			5.43
08	02	900824	16.30	71	77	55	07	02	4	080			1.90
08	03	900824	16.30	77	55	71	07	02	4	080			7.61

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
08	04	900824	16.30	55	71	77	07	02	4	080	12 06 n	096 22 w	1.36
09	01	900824	16.85	55	71	77	07	02	4	080	12 06 n	096 21 w	3.65
10	01	900824	17.59	67	56	69	07	03	2	080	12 06 n	096 15 w	5.86
10	02	900824	17.59	56	69	67	07	03	2	080			2.93
01	01	900825	16.67	55	71	77			4	071	12 31 n	093 40 w	3.33
02	01	900825	18.52	69	67	56			4	071	12 37 n	093 36 w	2.47
02	02	900825	18.52	69	67	56	12	12	4	071			7.10
02	03	900825	18.52	67	56	69			4	071			7.72
02	04	900825	18.52	56	69	67	07	01	4	071	12 43 n	093 28 w	6.79
02	05	900825	18.52	55	71	77	07	01	4	071	12 45 n	093 24 w	9.26
03	01	900825	19.08	55	71	77	07	01	4	071			1.91
03	02	900825	19.08	55	71	77	07	01	4	078	12 49 n	093 16 w	0.64
03	03	900825	19.08	71	77	55	06	01	4	078			7.31
04	01	900825	20.37	77	55	71	07	02	4	068	12 56 n	093 10 w	4.07
04	02	900825	20.37	69	67	56	07	02	4	068	12 58 n	093 07 w	10.19
04	03	900825	20.37	67	56	69	07	02	4	068			10.19
04	04	900825	20.37	56	69	67	07	02	4	068	13 03 n	092 58 w	4.75
04	05	900825	20.37	56	69	67	06	02	4	080	13 04 n	092 55 w	3.73
05	01	900825	20.37	55	71	77	07	02	4	080	13 04 n	092 52 w	3.73
01	01	900831	17.96	56	67	69	02	01	4	209	13 49 n	090 50 w	6.59
01	02	900831	17.96	67	69	56	02	02	4	209			6.89
01	03	900831	17.96	69	56	67	02	02	4	209			1.80
02	01	900831	17.59	55	71	77	02	02	4	209	13 39 n	090 55 w	8.21
02	02	900831	17.59	71	77	55	02	02	3	209	13 34 n	090 57 w	8.21
02	03	900831	17.59	77	55	71	02	02	3	209	13 30 n	090 59 w	2.05
03	01	900831	17.22	77	55	71	02	03	3	209	13 28 n	091 01 w	2.01
04	01	900831	17.78	56	67	69	02	03	3	209	13 25 n	091 02 w	5.33
04	02	900831	17.78	56	67	69	02	03	3	209	13 25 n	091 02 w	0.30
01	01	900901	19.45	77	55	71			1	206	11 48 n	092 00 w	2.59
01	02	900901	19.45	77	55	71	08	03	2	206			3.89
02	01	900901	20.19	55	71	77	08	02	2	206	11 41 n	092 08 w	10.77
03	01	900901	20.00	71	77	55	08	02	2	206	11 32 n	092 08 w	4.33
03	02	900901	20.00	69	56	67	08	02	2	206	11 30 n	092 09 w	13.33
03	03	900901	20.00	56	67	69	08	02	2	206			4.33
03	04	900901	20.00	56	67	69	08	01	2	206			9.00
03	05	900901	20.00	67	69	56	08	01	2	206			10.00
04	01	900901	19.26	77	55	71	09	01	1	193	11 07 n	092 24 w	7.70
04	02	900901	19.26	55	71	77	12	12	1	193			6.42
04	03	900901	19.26	69	56	67	12	12	1	193	10 59 n	092 27 w	4.49
04	04	900901	19.26	69	56	67	12	12	1	193	10 56 n	092 28 w	0.32
05	01	900901	19.63	56	67	69	12	12	2	193	10 56 n	092 31 w	1.64
06	01	900901	19.63	56	67	69	12	12	1	193	10 52 n	092 33 w	3.27
06	02	900901	19.63	67	69	56	02	01	2	193			1.64
07	01	900901	20.56	67	69	56	02	01	2	193	10 48 n	092 34 w	7.20
07	02	900901	20.56	77	55	71	02	01	2	193	10 44 n	092 36 w	8.22
07	03	900901	20.56	77	55	71			2	193	10 40 n	092 37 w	0.34
08	01	900901	20.74	55	71	77			2	193	10 38 n	092 40 w	3.46
09	01	900901	18.52	69	56	67			2	193	10 26 n	092 44 w	3.40
10	01	900901	18.52	56	67	69			2	193	10 20 n	092 50 w	1.85
11	01	900901	19.45	56	67	69			2	193	10 19 n	092 53 w	2.92
12	01	900901	19.63	77	55	71			2	210	10 17 n	092 53 w	0.98
01	01	900902	18.52	67	69	56	05	03	2	280	10 20 n	094 24 w	8.64
01	02	900902	18.52	67	69	56	05	03	3	280	10 21 n	094 35 w	2.16
01	03	900902	18.52	69	56	67	05	02	3	280			3.09

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
02	01	900902	21.11	56	67	69	05	02	3	280	10 19 n	094 52 w	7.39
02	02	900902	21.11	71	77	55	06	02	3	280	10 20 n	094 55 w	7.39
03	01	900902	20.93	77	55	71	06	01	3	280	10 21 n	095 04 w	6.98
04	01	900902	20.56	55	71	77	06	01	3	280	10 20 n	095 12 w	2.74
04	02	900902	20.56	67	69	56	06	01	3	280	10 21 n	095 14 w	3.08
05	01	900902	19.26	69	56	67	06	01	2	280	10 20 n	095 22 w	4.49
06	01	900902	19.08	56	67	69	12	12	1	280	10 18 n	095 26 w	5.72
06	02	900902	19.08	71	77	55	12	12	1	280	10 19 n	095 30 w	12.72
06	03	900902	19.08	77	55	71	11	12	1	280			6.36
06	04	900902	19.08	77	55	71	11	12	1	280	10 21 n	095 40 w	6.36
06	05	900902	19.08	55	71	77	11	01	1	280			2.23
07	01	900902	18.89	67	69	56	11	01	1	280	10 19 n	095 49 w	5.35
08	01	900902	19.08	69	56	67	11	01	1	280	10 23 n	095 56 w	8.58
09	01	900902	15.74	71	77	55	11	02	2	305	10 22 n	096 05 w	2.10
09	02	900902	15.74	67	69	56	11	03	2	305			7.87
09	03	900902	15.74	69	56	67	11	03	2	305	10 25 n	096 10 w	0.79
10	01	900902	15.74	69	56	67	11	03	2	305	10 26 n	096 11 w	3.67
10	02	900902	15.74	69	56	67	11	03	2	305	10 28 n	096 13 w	0.26
01	01	900903	19.26	55	71	77			3	285	10 54 n	097 53 w	9.63
01	02	900903	19.26	71	77	55			3	285	10 56 n	098 02 w	9.63
01	03	900903	19.26	77	55	71	05	02	3	285			8.03
01	04	900903	19.26	56	67	69			3	285	10 57 n	098 12 w	6.74
02	01	900903	18.89	67	69	56	05	02	3	285	11 00 n	098 19 w	1.89
02	02	900903	18.89	67	69	56			3	285			5.67
03	01	900903	18.52	69	56	67	05	01	3	285	11 02 n	098 25 w	4.01
04	01	900903	18.52	69	56	67	06	01	3	285	11 03 n	098 29 w	1.23
04	02	900903	18.52	55	71	77	06	01	3	285	11 03 n	098 29 w	12.35
04	03	900903	18.52	71	77	55	06	01	3	285			12.35
04	04	900903	18.52	77	55	71	06	01	3	285			12.35
04	05	900903	18.52	56	67	69			3	285	11 08 n	098 49 w	12.35
04	06	900903	18.52	67	69	56			3	285			5.56
04	07	900903	18.52	67	69	56			3	285	11 11 n	098 59 w	1.54
05	01	900903	18.71	55	71	77	09	01	3	340	11 13 n	099 02 w	10.60
05	02	900903	18.71	71	77	55	10	01	3	340			7.48
06	01	900903	18.52	77	55	71	11	01	3	310	11 25 n	099 06 w	6.17
06	02	900903	18.52	56	67	69	11	02	3	310	11 27 n	099 09 w	6.79
07	01	900903	14.82	55	71	77			3	280	11 27 n	099 14 w	3.70
07	02	900903	14.82	55	71	77			3	280			1.23
07	03	900903	14.82	55	71	77			3	280	11 27 n	099 17 w	0.25
01	01	900904	15.37	69	56	67	07	03	3	230	11 38 n	101 01 w	6.66
01	02	900904	15.37	56	67	69			3	230			6.15
02	01	900904	18.52	77	55	71			3	230			4.63
02	02	900904	18.52	77	55	71			3	230	11 21 n	101 19 w	3.40
02	03	900904	18.52	77	55	71			3	220	11 30 n	101 21 w	0.93
03	01	900904	16.48	55	71	77	08	02	3	220	11 26 n	101 22 w	5.49
03	02	900904	16.48	71	77	55	08	01	3	220			5.49
03	03	900904	16.48	69	56	67	08	01	3	220	11 21 n	101 27 w	10.99
03	04	900904	16.48	56	67	69	08	01	3	220	11 16 n	101 32 w	10.99
03	05	900904	16.48	67	69	56	08	01	3	220			4.12
04	01	900904	17.78	67	69	56	09	12	2	220	11 10 n	101 39 w	4.74
04	02	900904	17.78	77	55	71	09	12	2	220	11 08 n	101 41 w	2.67
05	01	900904	17.96	55	71	77	12	12	2	220	11 03 n	101 51 w	2.10
05	02	900904	17.96	55	71	77			2	220			8.98
05	03	900904	17.96	69	56	67	01	01	2	220	10 59 n	101 55 w	11.98

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
05	04	900904	17.96	56	67	69	01	01	3	220			2.10
06	01	900904	18.33	56	67	69	01	01	3	220	10 51 n	102 01 w	6.42
06	02	900904	18.33	67	69	56	01	01	3	220			6.72
06	03	900904	18.33	67	69	56			3	220	10 47 n	102 06 w	2.14
06	04	900904	18.33	67	69	56	01	01	3	220			3.36
06	05	900904	18.33	77	55	71	01	01	3	220	10 44 n	102 08 w	3.36
07	01	900904	18.52	55	71	77	02	02	3	220	10 42 n	102 11 w	7.10
07	02	900904	18.52	71	77	55	02	02	3	220	10 39 n	102 14 w	5.25
07	03	900904	18.52	71	77	55	02	02	2	220			4.01
07	04	900904	18.52	69	56	67	02	02	2	220	10 36 n	102 17 w	5.56
07	05	900904	18.52	69	56	67			2	220	10 34 n	102 19 w	2.47
01	01	900905	15.00	71	77	55			2	229	09 35 n	103 37 w	1.75
01	02	900905	15.00	71	77	55			3	229			1.25
02	01	900905	17.96	77	55	71			4	229	09 31 n	103 42 w	5.99
03	01	900905	18.15	67	69	56			2	229	09 20 n	103 56 w	0.60
04	01	900905	17.59	71	77	55	07	01	3	229	09 17 n	103 55 w	10.85
04	02	900905	17.59	77	55	71			3	229			1.76
05	01	900905	17.96	55	71	77			3	229	09 09 n	104 06 w	1.50
05	02	900905	17.96	55	71	77			3	229	09 09 n	104 06 w	3.59
05	03	900905	17.96	55	71	77			4	229	09 08 n	104 08 w	5.39
05	04	900905	17.96	67	69	56	08	12	4	229	09 06 n	104 11 w	10.48
06	01	900905	17.04	69	56	67			4	220	09 02 n	104 14 w	2.56
06	02	900905	17.04	69	56	67			5	220			6.53
06	03	900905	17.04	56	67	69			5	220			5.68
06	04	900905	17.04	56	67	69			5	232			2.84
06	05	900905	17.04	71	77	55	01	01	5	232	08 54 n	104 20 w	11.36
06	06	900905	17.04	77	55	71	01	01	5	232			2.84
06	07	900905	17.04	77	55	71			5	232			8.52
06	08	900905	17.04	55	71	77			5	232			1.42
07	01	900905	15.37	55	71	77			5	232	08 45 n	104 26 w	2.05
07	02	900905	15.37	67	69	56			5	232			1.28
07	03	900905	15.37	67	69	56			5	232	08 44 n	104 27 w	0.26
01	01	900906	15.00	56	67	69			5	236	07 40 n	105 50 w	6.50
01	02	900906	15.00	56	67	69			5	236			2.25
01	03	900906	15.00	67	69	56			5	236			2.00
01	04	900906	15.00	67	69	56	07	02	5	236	07 36 n	105 57 w	7.00
01	05	900906	15.00	69	56	67			5	236			7.50
01	06	900906	15.00	55	71	77			5	236	07 32 n	106 04 w	10.00
01	07	900906	15.00	71	77	55	07	02	5	236			8.75
01	08	900906	15.00	71	77	55			5	236			2.25
01	09	900906	15.00	77	55	71	07	01	5	236			9.00
01	10	900906	15.00	56	67	69	07	01	5	236	07 22 n	106 18 w	7.50
01	11	900906	15.00	56	67	69	07	01	5	236			1.25
02	01	900906	15.00	67	69	56	08	01	5	236	07 18 n	106 23 w	3.00
02	02	900906	15.00	67	69	56	08	01	5	236			1.25
02	03	900906	15.00	67	69	56	08	12	5	236	07 16 n	106 25 w	5.00
02	04	900906	15.00	69	56	67	12	12	5	236			10.00
02	05	900906	15.00	55	71	77	12	12	5	236	07 11 n	106 31 w	6.25
02	06	900906	15.00	55	71	77	12	12	5	230	07 09 n	106 34 w	3.75
02	07	900906	15.00	71	77	55	01	12	5	230			1.50
02	08	900906	15.00	71	77	55			5	230			5.00
03	01	900906	14.45	71	77	55	01	12	5	230	07 05 n	106 38 w	1.44
03	02	900906	14.45	77	55	71			5	230			2.41
03	03	900906	14.45	77	55	71	01	01	5	230			6.74

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
03	04	900906	14.45	56	67	69	01	01	5	230	07 01 n	106 42 w	9.63
03	05	900906	14.45	67	69	56	01	01	5	230			4.82
03	06	900906	14.45	67	69	56			5	230	06 53 n	106 50 w	4.82
03	07	900906	14.45	69	56	67			5	230			3.37
03	08	900906	14.45	69	56	67			4	230			3.85
03	09	900906	14.45	69	56	67			4	230			2.41
03	10	900906	14.45	55	71	77			4	230	06 50 n	106 53 w	3.37
03	11	900906	14.45	55	71	77			4	240	06 49 n	106 54 w	4.33
03	12	900906	14.45	71	77	55			4	240			6.02
04	01	900906	14.08	77	55	71			4	240	06 44 n	107 01 w	3.28
01	01	900907	17.59	77	55	71			5	240	05 56 n	108 15 w	4.98
01	02	900907	17.59	77	55	71	07	03	5	240			0.88
01	03	900907	17.59	55	71	77	07	03	5	240			5.86
01	04	900907	17.59	71	77	55	07	03	5	240			5.86
02	01	900907	16.11	69	56	67			5	240	05 47 n	108 35 w	5.37
02	02	900907	16.11	56	67	69			5	240			5.10
02	03	900907	16.11	67	69	56	07	02	5	240			5.64
03	01	900907	16.48	77	55	71	07	01	5	240	05 38 n	108 50 w	5.49
03	02	900907	16.48	55	71	77	07	01	5	240			5.49
03	03	900907	16.48	71	77	55	07	01	5	240			5.49
04	01	900907	16.30	69	56	67	12	12	5	240	05 29 n	109 06 w	5.43
04	02	900907	16.30	56	67	69	12	12	5	240			5.43
04	03	900907	16.30	67	69	56	12	12	5	240			5.43
05	01	900907	16.85	77	55	71	01	01	5	240	05 21 n	109 21 w	5.62
05	02	900907	16.85	55	71	77	01	01	5	240			5.62
05	03	900907	16.85	71	77	55	01	01	5	240			4.49
05	04	900907	16.85	71	77	55	01	01	5	243	05 16 n	109 28 w	1.12
06	01	900907	17.41	69	56	67	01	02	5	243	05 12 n	109 37 w	7.83
06	02	900907	17.41	56	67	69	01	02	5	243			8.70
06	03	900907	17.41	67	69	56	01	02	5	243	05 08 n	109 46 w	8.70
06	04	900907	17.41	77	55	71	01	03	5	243			4.64
06	05	900907	17.41	77	55	71	01	03	4	243			1.16
06	06	900907	17.41	55	71	77	01	03	4	243			5.80
06	07	900907	17.41	71	77	55			4	243			3.19
06	08	900907	17.41	71	77	55			4	243	05 02 n	109 56 w	0.29
01	01	900908	16.30	67	69	56			4	270	05 03 n	111 21 w	8.15
01	02	900908	16.30	69	56	67			4	270	05 02 n	111 27 w	8.15
01	03	900908	16.30	56	67	69			4	270			8.15
01	04	900908	16.30	71	77	55			4	270	05 03 n	111 39 w	4.62
01	05	900908	16.30	71	77	55	06	02	4	270			1.63
01	06	900908	16.30	71	77	55			4	270			2.44
02	01	900908	15.56	77	55	71			4	270	05 03 n	111 45 w	1.30
03	01	900908	18.52	77	55	71			4	270	05 03 n	111 47 w	9.88
03	02	900908	18.52	55	71	77			4	270			12.35
04	01	900908	12.96	67	69	56			4	270	05 03 n	111 59 w	6.27
05	01	900908	18.15	69	56	67			4	270	05 03 n	112 04 w	4.54
05	02	900908	18.15	69	56	67			4	270	05 03 n	112 06 w	6.96
05	03	900908	18.15	56	67	69			4	270			11.19
05	04	900908	18.15	71	77	55			4	270	05 03 n	112 16 w	3.33
06	01	900908	17.41	77	55	71			4	270	04 58 n	112 24 w	4.35
06	02	900908	17.41	77	55	71	12	12	4	270			4.35
06	03	900908	17.41	55	71	77	12	01	4	270			8.70
06	04	900908	17.41	67	69	56	12	01	4	270	04 58 n	112 33 w	11.61
06	05	900908	17.41	69	56	67	12	01	4	270			11.61

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
06	06	900908	17.41	56	67	69			4	270			6.38
06	07	900908	17.41	56	67	69	12	01	4	270			5.22
06	08	900908	17.41	71	77	55	12	02	4	270	04 59 n	112 52 w	2.03
06	09	900908	17.41	71	77	55			4	270			5.22
06	10	900908	17.41	71	77	55	12	02	4	270			1.45
06	11	900908	17.41	77	55	71	12	02	4	270			8.70
06	12	900908	17.41	55	71	77			4	270	04 58 n	113 01 w	4.93
06	13	900908	17.41	55	71	77	12	02	4	270			3.77
06	14	900908	17.41	67	69	56			4	270			4.35
06	15	900908	17.41	67	69	56	12	03	4	270			1.45
06	16	900908	17.41	69	56	67	01	03	4	260	04 58 n	113 10 w	5.80
06	17	900908	17.41	56	67	69	01	03	4	260			4.35
06	18	900908	17.41	56	67	69	01	03	4	260	04 57 n	113 14 w	0.29
01	01	900909	15.37	55	71	77			4	270	05 00 n	114 51 w	5.12
01	02	900909	15.37	55	71	77	06	03	4	270	05 00 n	114 55 w	2.05
01	03	900909	15.37	71	77	55			4	270	05 00 n	114 56 w	5.12
02	01	900909	17.04	77	55	71			4	270	05 03 n	115 07 w	1.42
02	02	900909	17.04	56	67	69			4	270	05 03 n	115 07 w	11.36
02	03	900909	17.04	67	69	56	06	02	4	270			3.41
03	01	900909	15.37	69	56	67	06	01	4	270	05 01 n	115 19 w	7.94
03	02	900909	15.37	55	71	77	06	01	4	270	05 01 n	115 25 w	10.25
03	03	900909	15.37	71	77	55	06	01	4	270	05 02 n	115 31 w	2.05
04	01	900909	16.30	77	55	71	06	12	4	270	05 03 n	115 33 w	2.44
04	02	900909	16.30	56	67	69	12	12	4	270	05 03 n	115 34 w	10.87
04	03	900909	16.30	67	69	56			4	270			10.05
05	01	900909	17.78	69	56	67			4	270	05 03 n	115 50 w	2.37
05	02	900909	17.78	69	56	67	12	01	4	270			3.56
05	03	900909	17.78	55	71	77			4	270	05 03 n	115 53 w	1.48
05	04	900909	17.78	55	71	77	12	01	4	270	05 03 n	115 54 w	10.37
05	05	900909	17.78	71	77	55	12	01	4	270			10.67
05	06	900909	17.78	71	77	55			4	270			1.19
05	07	900909	17.78	77	55	71	12	01	4	270	05 04 n	116 06 w	11.85
05	08	900909	17.78	56	67	69	01	02	4	250	05 03 n	116 13 w	8.89
05	09	900909	17.78	67	69	56	01	02	4	250	05 01 n	116 17 w	8.89
05	10	900909	17.78	69	56	67	01	02	4	250	05 00 n	116 24 w	8.89
05	11	900909	17.78	55	71	77			4	250			1.48
05	12	900909	17.78	55	71	77	01	02	4	250	04 58 n	116 29 w	1.48
05	13	900909	17.78	55	71	77			4	250	04 58 n	116 29 w	0.89
06	01	900909	18.33	71	77	55			4	250	04 57 n	116 30 w	3.36
06	02	900909	18.33	71	77	55			4	250	04 57 n	116 32 w	0.31
01	01	900910	17.78	69	56	67			4	105	04 50 n	117 08 w	5.33
02	01	900910	17.96	56	67	69	11	03	4	105	04 46 n	117 05 w	7.78
03	01	900910	17.96	77	55	71	11	02	4	105	04 44 n	117 00 w	3.89
04	01	900910	17.22	55	71	77	11	02	5	125	04 42 n	116 56 w	8.04
04	02	900910	17.22	71	77	55	11	01	5	125			6.03
04	03	900910	17.22	71	77	55			5	125			1.72
04	04	900910	17.41	69	56	67	11	01	5	105	04 36 n	116 49 w	5.80
04	05	900910	17.41	56	67	69	11	01	5	105			5.80
04	06	900910	17.41	67	69	56			5	105			11.61
05	01	900910	16.85	77	55	71			5	105	04 31 n	116 31 w	3.93
06	01	900910	17.78	55	71	77			5	105	04 34 n	116 23 w	8.30
06	02	900910	17.78	71	77	55	05	12	4	105			7.41
06	03	900910	17.78	69	56	67			4	105	04 32 n	116 16 w	11.85
06	04	900910	17.78	56	67	69			4	105			2.96

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
06	05	900910	17.78	56	67	69	05	01	4	105			8.89
06	06	900910	17.78	67	69	56	05	01	4	105			5.93
06	07	900910	17.78	67	69	56			4	105			5.93
06	08	900910	17.78	77	55	71			4	105	04 28 n	115 56 w	5.04
06	09	900910	17.78	77	55	71	05	02	4	105	04 27 n	115 53 w	3.85
06	10	900910	17.78	55	71	77			4	105			8.89
06	11	900910	17.78	71	77	55	06	02	4	105	04 26 n	115 45 w	8.89
06	12	900910	17.78	69	56	67			4	105			2.37
07	01	900910	18.15	56	67	69	06	03	4	105	04 25 n	115 40 w	7.56
07	02	900910	18.15	67	69	56	06	03	4	105			2.72
01	01	900911	15.19	71	77	55			4	105	04 06 n	114 11 w	4.56
01	02	900911	15.19	71	77	55	11	03	4	105	04 05 n	114 09 w	3.54
01	03	900911	15.19	77	55	71	11	03	4	105			5.57
01	04	900911	15.19	77	55	71	11	02	5	105			0.76
01	05	900911	15.19	55	71	77	11	02	5	105			4.30
01	06	900911	15.19	55	71	77	11	02	5	120	04 14 n	114 01 w	0.25
02	01	900911	15.37	67	69	56	11	01	5	120	04 02 n	113 56 w	4.36
02	02	900911	15.37	67	69	56	10	01	5	135			2.05
02	03	900911	15.37	69	56	67	10	01	5	135			6.40
02	04	900911	15.37	71	77	55	11	01	5	135	03 59 n	113 52 w	5.12
02	05	900911	15.37	77	55	71	11	01	5	135			5.12
02	06	900911	15.37	55	71	77	11	01	5	135			2.56
03	01	900911	14.63	71	77	55	12	12	5	104	03 48 n	113 44 w	1.95
03	02	900911	14.63	67	69	56	12	12	5	104	03 48 n	113 43 w	4.88
03	03	900911	14.63	69	56	67	12	12	5	104			4.88
03	04	900911	14.63	56	67	69	12	12	5	104			2.19
04	01	900911	15.00	71	77	55	05	01	4	104	03 46 n	113 31 w	10.00
04	02	900911	15.00	77	55	71	06	01	4	104			10.00
04	03	900911	15.00	55	71	77	05	01	4	104			6.75
04	04	900911	15.00	55	71	77			4	104			1.50
04	05	900911	15.00	55	71	77	05	01	4	104			1.75
04	06	900911	15.00	67	69	56	05	02	4	104	03 44 n	113 14 w	4.25
05	01	900911	17.04	71	77	55	06	03	3	104	03 53 n	113 09 w	7.10
05	02	900911	17.04	71	77	55			3	104			1.70
05	03	900911	17.04	71	77	55			3	109	03 53 n	113 05 w	2.56
05	04	900911	17.04	71	77	55			3	109	03 53 n	113 04 w	0.28
01	01	900912	13.70	56	67	69			2	106	03 32 n	111 42 w	4.57
01	02	900912	13.70	67	69	56			2	106			2.06
02	01	900912	15.74	67	69	56			3	106	03 30 n	111 36 w	3.41
02	02	900912	15.74	69	56	67			3	106			2.10
02	03	900912	15.74	69	56	67	11	02	3	106			2.36
02	04	900912	15.74	69	56	67			3	106			3.41
02	05	900912	15.74	55	71	77			3	106	03 31 n	111 29 w	3.67
02	06	900912	15.74	55	71	77	11	02	3	106			6.82
02	07	900912	15:56	71	77	55	10	02	3	136	03 29 n	111 23 w	3.37
02	08	900912	15.56	71	77	55			4	136			1.81
02	09	900912	15.56	71	77	55	10	02	4	136	03 27 n	111 21 w	0.78
03	01	900912	15.56	71	77	55	10	01	4	136			1.04
03	02	900912	15.56	77	55	71	10	01	4	136			10.37
03	03	900912	15.56	56	67	69	10	01	4	136	03 21 n	111 15 w	6.74
03	04	900912	15.56	56	67	69	11	01	4	106	03 18 n	111 13 w	3.63
03	05	900912	15.56	67	69	56	11	01	4	106			1.30
03	06	900912	15.56	67	69	56			3	106			9.07
03	07	900912	15.56	69	56	67			3	106			8.56

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
03	08	900912	15.56	69	56	67	12	12	3	106			1.81
03	09	900912	15.56	55	71	77	12	12	3	106	03 16 n	111 01 w	5.19
03	10	900912	15.56	55	71	77	12	12	3	106	03 15 n	110 58 w	5.19
03	11	900912	15.56	71	77	55	12	12	4	106			2.59
04	01	900912	16.48	77	55	71	05	01	4	106	03 20 n	110 51 w	4.67
05	01	900912	14.82	56	67	69			4	106	03 20 n	110 46 w	6.67
05	02	900912	14.82	56	67	69			4	115			1.23
05	03	900912	14.82	67	69	56			4	115	03 19 n	110 42 w	7.90
05	04	900912	14.82	69	56	67			4	115			7.65
05	05	900912	14.82	55	71	77			4	115	03 16 n	110 35 w	7.41
05	06	900912	14.82	71	77	55			4	115			7.16
06	01	900912	15.37	77	55	71			4	115	03 12 n	110 26 w	4.10
06	02	900912	15.37	56	67	69			4	115			5.12
06	03	900912	15.37	67	69	56			4	115			5.12
01	01	900913	13.52	69	56	67	09	01	4	173	01 59 n	110 07 w	4.51
01	02	900913	13.52	56	67	69	09	01	4	173			4.51
01	03	900913	13.52	77	55	71	09	01	5	173	01 53 n	110 09 w	1.35
01	04	900913	13.33	55	71	77	10	01	5	145			7.56
02	01	900913	12.96	71	77	55	10	01	5	145	01 49 n	110 07 w	4.32
03	01	900913	12.78	69	56	67	12	12	5	145	01 41 n	110 04 w	4.26
03	02	900913	12.78	56	67	69	12	12	5	145			4.26
03	03	900913	12.78	67	69	56	12	12	5	145			4.26
04	01	900913	14.45	77	55	71	03	01	5	170	01 23 n	110 00 w	7.22
05	01	900913	14.45	55	71	77	03	02	4	170	01 17 n	110 01 w	7.22
05	02	900913	14.45	69	56	67	03	02	4	170	01 13 n	110 00 w	3.13
05	03	900913	14.45	69	56	67	03	02	4	175	01 11 n	110 00 w	2.65
05	04	900913	14.45	69	56	67			4	175			1.44
05	05	900913	14.45	56	67	69	03	02	4	175			6.02
05	06	900913	14.45	56	67	69			4	175			1.20
05	07	900913	14.45	56	67	69			4	175	01 04 n	110 00 w	0.24
01	01	900914	16.67	67	69	56	09	03	4	180	00 25 s	110 00 w	5.83
01	02	900914	16.67	67	69	56			4	180			3.06
01	03	900914	16.67	69	56	67			4	180			1.11
01	04	900914	16.67	69	56	67	09	03	4	175	00 31 s	110 02 w	7.78
01	05	900914	16.67	56	67	69	09	02	4	175			8.89
01	06	900914	16.67	71	77	55	09	02	4	175	00 40 s	110 09 w	8.33
01	07	900914	16.67	71	77	55	10	02	4	158	00 44 s	110 04 w	2.78
01	08	900914	16.67	77	55	71	10	02	4	158			6.11
01	09	900914	16.67	77	55	71	09	02	4	175	00 49 s	110 01 w	5.00
01	10	900914	16.67	55	71	77	09	02	4	175			11.11
02	01	900914	16.85	67	69	56	09	01	4	175	01 02 s	110 00 w	3.65
02	02	900914	16.85	67	69	56	09	12	4	175			3.37
02	03	900914	16.85	69	56	67	12	12	4	175			3.37
03	01	900914	17.41	71	77	55	12	12	4	175	01 09 s	109 59 w	11.61
03	02	900914	17.41	77	55	71	12	12	4	175			11.61
03	03	900914	17.41	55	71	77	04	12	4	175			11.61
03	04	900914	17.41	67	69	56	04	01	4	175	01 28 s	110 00 w	5.80
03	05	900914	17.41	69	56	67	04	01	4	175			5.80
03	06	900914	17.41	56	67	69	03	01	4	175			5.80
03	07	900914	17.41	67	69	56	03	01	4	175	01 38 s	109 59 w	5.80
03	08	900914	17.41	69	56	67	03	01	4	175			5.80
03	09	900914	17.41	56	67	69			4	175			1.45
04	01	900914	16.67	71	77	55	03	02	4	178	01 47 s	109 59 w	1.94
04	02	900914	16.67	71	77	55	03	02	4	178			0.83

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
05	01	900914	16.85	71	77	55			4	178	01 51 s	110 00 w	1.12
05	02	900914	16.85	71	77	55	03	02	5	178			1.12
06	01	900914	16.67	77	55	71	03	02	4	178	01 53 s	110 00 w	7.78
06	02	900914	16.67	55	71	77	03	02	4	178			1.39
06	03	900914	16.67	55	71	77	03	02	4	178			0.83
06	04	900914	16.67	55	71	77	03	02	4	178	01 58 s	110 01 w	0.28
01	01	900915	20.37	55	71	77			4	060	02 42 s	109 33 w	11.88
01	02	900915	20.37	71	77	55			4	060			0.68
01	03	900915	15.93	71	77	55			4	065	02 40 s	109 33 w	5.57
01	04	900915	15.93	71	77	55			4	065			1.33
02	01	900915	15.93	77	55	71			4	065	02 38 s	109 28 w	5.31
02	02	900915	15.93	56	67	69	01	02	4	065	02 37 s	109 25 w	2.65
02	03	900915	15.93	56	67	69			4	065			7.17
03	01	900915	16.67	67	69	56			4	065	02 33 s	109 19 w	1.67
03	02	900915	16.67	67	69	56			4	065	02 33 s	109 17 w	1.67
04	01	900915	16.30	69	67	56			5	065	02 29 s	109 12 w	2.99
04	02	900915	16.30	55	71	77	01	01	5	065	02 28 s	109 10 w	5.43
04	03	900915	16.30	71	77	55			4	065			3.53
04	04	900915	16.30	71	77	55	12	01	4	065	02 26 s	109 06 w	1.09
04	05	900915	16.30	71	77	55			5	065			0.81
04	06	900915	16.30	77	55	71			5	065			2.44
04	07	900915	16.30	77	55	71			5	065			1.90
05	01	900915	16.30	55	71	77			5	065	02 24 s	109 00 w	6.52
05	02	900915	16.30	71	77	55	12	12	5	065	02 23 s	108 57 w	3.80
06	01	900915	15.74	56	67	69	12	12	5	065	02 21 s	108 55 w	3.94
06	02	900915	15.74	67	69	56			5	065			5.25
06	03	900915	15.74	69	56	67	12	12	5	065			5.25
07	01	900915	15.56	55	71	77			5	065	02 14 s	108 40 w	5.19
07	02	900915	15.56	71	77	55			5	065			3.37
07	03	900915	15.56	71	77	55	07	01	5	065			1.81
07	04	900915	15.56	77	55	71	07	01	5	065			5.19
08	01	900915	15.19	56	67	69	07	02	5	065	02 08 s	108 25 w	4.30
09	01	900915	15.19	56	67	69	07	02	5	065	02 06 s	108 23 w	1.77
09	02	900915	15.19	67	69	56	07	02	5	065			7.59
09	03	900915	15.19	69	56	67	07	02	5	065	02 04 s	108 18 w	7.59
09	04	900915	15.19	55	71	77	07	03	5	065			3.80
09	05	900915	15.19	55	71	77	07	03	5	065	02 01 s	108 13 w	0.25
01	01	900916	15.56	69	56	67			4	060	01 15 s	106 52 w	0.78
02	01	900916	15.93	69	56	67			4	048	01 15 s	106 48 w	5.84
02	02	900916	15.93	56	67	69			4	048			5.84
02	03	900916	15.93	67	69	56			4	048			5.84
02	04	900916	15.93	77	55	71			4	048	01 08 s	106 41 w	3.45
02	05	900916	15.93	77	55	71			3	048			7.17
02	06	900916	15.93	55	71	77			3	048			9.56
02	07	900916	15.93	55	71	77			3	048	01 00 s	106 30 w	0.27
03	01	900916	17.04	71	77	55	01	01	3	054	00 59 s	106 28 w	3.98
03	02	900916	17.04	69	56	67	01	01	3	054	00 58 s	106 26 w	11.36
03	03	900916	17.04	56	67	69	01	01	3	054			5.68
03	04	900916	17.04	56	67	69			3	054	00 52 s	106 19 w	5.68
03	05	900916	17.04	67	69	56	12	12	3	054			2.84
03	06	900916	17.04	67	69	56			3	054	00 50 s	106 15 w	7.95
04	01	900916	16.30	77	55	71	12	12	3	056	00 48 s	106 11 w	8.15
04	02	900916	16.30	77	55	71	08	12	4	056	00 46 s	106 08 w	1.63
04	03	900916	16.30	55	71	77	08	12	4	056			8.96

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
04	04	900916	16.30	71	77	55	08	01	4	056			8.15
05	01	900916	15.93	69	56	67	07	01	4	056	00 40 s	105 53 w	6.90
05	02	900916	15.93	56	67	69	07	02	3	056			6.37
05	03	900916	15.93	67	69	56			4	056			6.64
05	04	900916	15.93	77	55	71			3	056	00 35 s	105 44 w	5.84
05	05	900916	15.93	77	55	71	07	02	3	056			2.12
05	06	900916	15.93	55	71	77			3	056			7.96
05	07	900916	15.93	71	77	55			3	056	00 29 s	105 37 w	2.65
05	08	900916	15.93	71	77	55	07	03	3	056			1.59
05	09	900916	15.93	71	77	55			3	056	00 27 s	105 35 w	0.53
06	01	900916	16.30	69	56	67			3	056	00 27 s	105 34 w	2.72
06	02	900916	16.30	69	56	67			3	056	00 26 s	105 32 w	0.54
01	01	900917	13.52	71	77	55			4	070	00 22 n	104 25 w	7.66
01	02	900917	13.52	77	55	71			4	070	00 23 n	104 23 w	4.06
01	03	900917	13.52	77	55	71			4	070	00 24 n	104 19 w	1.80
01	04	900917	13.52	77	55	71	01	02	5	070	00 26 n	104 18 w	0.45
02	01	900917	14.63	55	71	77			5	070	00 27 n	104 16 w	6.10
02	02	900917	14.63	67	69	56			4	070	00 28 n	104 13 w	3.41
03	01	900917	15.93	69	56	67	12	01	4	070	00 35 n	104 06 w	3.19
03	02	900917	15.93	69	56	67	12	01	4	070			1.33
04	01	900917	15.37	71	77	55	12	01	5	070	00 38 n	104 01 w	4.36
04	02	900917	15.37	77	55	71	01	01	5	070			4.87
04	03	900917	15.37	55	71	77	01	01	5	070			5.12
04	04	900917	15.37	71	77	55	12	01	5	070	00 42 n	103 54 w	2.56
04	05	900917	15.37	71	77	55			4	070			2.82
04	06	900917	15.37	77	55	71			4	070			1.28
05	01	900917	15.00	55	71	77			4	070			5.00
05	02	900917	15.00	67	69	56			4	070	00 46 n	103 47 w	5.75
05	03	900917	15.00	67	69	56			4	070			4.25
05	04	900917	15.00	69	56	67			4	070			4.00
05	05	900917	15.00	69	56	67			4	070			1.00
06	01	900917	15.37	56	67	69	07	01	4	070	00 51 n	103 37 w	8.45
07	01	900917	15.19	71	77	55	07	01	4	070	00 55 n	103 33 w	3.29
07	02	900917	15.19	71	77	55	07	01	5	070			0.76
08	01	900917	14.45	77	55	71	07	01	5	070	00 55 n	103 30 w	2.89
08	02	900917	14.45	77	55	71	07	01	4	070			6.26
08	03	900917	14.45	55	71	77	07	02	4	070			9.63
08	04	900917	14.45	67	69	56	07	02	4	070	00 59 n	103 21 w	3.61
08	05	900917	14.45	67	69	56			4	070			3.61
08	06	900917	14.45	69	56	67			4	070			7.22
08	07	900917	14.45	56	67	69			4	070	01 03 n	103 15 w	7.22
08	08	900917	14.45	71	77	55	07	03	4	070			2.41
08	09	900917	14.45	71	77	55			4	070			1.20
08	10	900917	14.45	71	77	55			4	070	01 06 n	103 08 w	0.24
01	01	900918	12.22	56	67	69	01	03	4	063	01 43 n	101 50 w	1.43
01	02	900918	12.22	56	67	69			4	063			2.04
02	01	900918	10.93	67	69	56	01	03	4	063	01 44 n	101 47 w	2.19
02	02	900918	10.93	67	69	56			4	063	01 45 n	101 46 w	0.36
03	01	900918	15.37	56	80	69			4	065	02 01 n	101 26 w	5.12
03	02	900918	15.37	80	69	56	12	12	4	065			5.12
03	03	900918	15.37	55	71	77	12	12	4	065	02 03 n	101 21 w	4.61
03	04	900918	15.37	55	71	77			4	065			2.82
03	05	900918	15.37	55	71	77	12	12	4	065			2.82
03	06	900918	15.37	71	77	55	07	12	4	065			7.17

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
04	01	900918	15.00	77	55	71	07	01	4	065	02 10 n	101 13 w	9.25
04	02	900918	15.00	56	80	69	07	01	4	065	02 12 n	101 09 w	6.25
04	03	900918	15.00	56	80	69	07	01	4	070	02 14 n	101 06 w	3.75
04	04	900918	15.00	80	69	56			4	070			2.00
04	05	900918	15.00	80	69	56	07	02	4	070			3.00
04	06	900918	15.00	80	69	56	07	02	4	070	02 16 n	101 02 w	3.00
04	07	900918	15.00	80	69	56			4	070			2.00
04	08	900918	15.00	69	56	80			4	070			10.00
04	09	900918	15.00	55	71	77			4	070	02 20 n	100 55 w	2.50
04	10	900918	15.00	55	71	77			4	080	02 20 n	100 53 w	1.00
04	11	900918	15.00	55	71	77			4	070	02 20 n	100 53 w	4.00
04	12	900918	15.00	71	77	55			4	070			7.50
04	13	900918	15.00	77	55	71			4	070	02 23 n	100 47 w	2.50
04	14	900918	15.00	77	55	71			4	070			3.25
04	15	900918	15.00	77	55	71			4	070	02 25 n	100 44 w	0.25
01	01	900919	15.56	77	55	71			4	075	03 05 n	099 27 w	1.81
01	02	900919	15.56	77	55	71			4	075			2.59
01	03	900919	15.56	77	55	71			4	075			2.85
01	04	900919	15.56	77	55	71			4	075			1.56
02	01	900919	16.30	55	71	77	12	02	4	075	03 07 n	099 20 w	0.81
02	02	900919	16.30	55	71	77	01	02	4	070			10.87
02	03	900919	16.30	71	77	55	01	02	4	070			1.90
02	04	900919	18.89	71	77	55	01	02	4	050	03 10 n	099 13 w	8.82
02	05	900919	18.89	69	56	67	01	02	4	050	03 13 n	099 11 w	5.04
02	06	900919	18.89	69	56	67	01	02	5	050			7.56
02	07	900919	18.89	56	67	69	01	01	5	050			7.87
02	08	900919	18.89	56	67	69			5	050			4.72
02	09	900919	18.89	67	69	56	01	01	5	050			12.59
02	10	900919	18.89	77	55	71	01	01	5	050	03 28 n	098 56 w	3.78
02	11	900919	18.89	77	55	71	02	01	5	039			8.82
02	12	900919	18.89	55	71	77	02	12	5	039			12.59
02	13	900919	18.89	71	77	55	12	12	4	039			12.59
02	14	900919	18.89	69	56	67	12	12	4	039	03 44 n	098 41 w	6.30
03	01	900919	18.89	69	56	67			4	039	03 48 n	098 38 w	2.20
03	02	900919	18.89	56	67	69			4	039			12.59
03	03	900919	18.89	67	69	56	08	01	4	039			7.87
03	04	900919	18.89	67	69	56			4	039			4.72
03	05	900919	18.89	77	55	71			4	039	03 59 n	098 28 w	12.59
03	06	900919	18.89	55	71	77			4	039			3.46
03	07	900919	18.89	55	71	77			4	039			9.13
03	08	900919	18.89	71	77	55			4	039			4.09
04	01	900919	19.45	69	56	67			4	039	04 21 n	098 13 w	6.48
04	02	900919	19.45	56	67	69			4	039	04 24 n	098 10 w	3.24
04	03	900919	19.45	56	67	69			4	039	04 24 n	098 09 w	0.32
01	01	900920	19.82	67	69	56			4	140	05 13 n	096 23 w	11.56
01	02	900920	19.82	71	77	55			4	140	05 09 n	096 19 w	6.28
01	03	900920	19.82	71	77	55			4	135	05 06 n	096 15 w	7.27
02	01	900920	20.37	77	55	71			4	135	05 01 n	096 09 w	7.81
03	01	900920	16.11	67	69	56			4	135	04 53 n	096 03 w	6.71
03	02	900920	16.11	69	56	67			4	135			6.98
03	03	900920	16.11	56	67	69			4	135			6.44
03	04	900920	16.11	71	77	55			4	135	04 44 n	095 53 w	2.42
03	05	900920	16.11	71	77	55	04	02	4	135	04 43 n	095 53 w	2.42
03	06	900920	16.11	71	77	55			4	135			3.22

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
03	07	900920	16.11	77	55	71			4	135			1.88
04	01	900920	20.19	55	71	77			4	135	04 38 n	095 47 w	3.36
04	02	900920	20.19	67	69	56	04	03	4	135			6.73
04	03	900920	20.19	69	56	67	04	03	4	135			4.71
04	04	900920	20.19	69	56	67	04	03	4	135	04 33 n	095 41 w	0.34
01	01	900921	20.37	55	71	77			4	133	03 25 n	094 27 w	9.17
01	02	900921	20.37	55	71	77	11	03	4	133			2.72
01	03	900921	20.37	71	77	55			4	133	03 20 n	094 26 w	2.72
01	04	900921	20.37	71	77	55			4	125	03 20 n	094 26 w	4.41
02	01	900921	17.04	77	55	71			4	125	03 17 n	094 22 w	5.68
02	02	900921	17.04	56	67	69			4	125	03 15 n	094 20 w	2.56
03	01	900921	17.78	56	67	69			4	125	03 14 n	094 17 w	2.96
03	02	900921	17.78	67	69	56			4	125			11.85
03	03	900921	17.78	69	56	67			4	125			11.85
03	04	900921	17.78	55	71	77	11	01	4	125	03 04 n	094 04 w	11.85
03	05	900921	17.78	71	77	55	11	01	4	125			11.85
03	06	900921	17.78	77	55	71	11	12	4	125			11.85
03	07	900921	17.78	56	67	69	11	12	4	125	02 53 n	093 50 w	11.85
03	08	900921	17.78	67	69	56	04	12	4	125			5.93
03	09	900921	17.78	67	69	56	04	12	4	125	02 47 n	093 42 w	5.93
03	10	900921	17.78	69	56	67	04	01	4	125			11.85
03	11	900921	17.78	55	71	77	05	01	4	125	02 40 n	093 34 w	11.85
03	12	900921	17.78	71	77	55	05	01	4	125			5.93
03	13	900921	17.78	71	77	55	05	01	5	125	02 35 n	093 27 w	5.93
03	14	900921	17.78	77	55	71	05	02	5	125			11.85
03	15	900921	17.78	56	67	69	05	02	5	125	02 30 n	093 19 w	8.89
03	16	900921	17.78	67	69	56	05	02	5	125			8.89
03	17	900921	17.78	69	56	67	05	02	5	125	02 24 n	093 11 w	6.22
03	18	900921	17.78	69	56	67	05	03	5	125			2.67
03	19	900921	17.78	55	71	77	05	03	5	125			5.93
03	20	900921	17.78	55	71	77			5	125	02 19 n	093 04 w	2.96
03	21	900921	17.78	55	71	77			5	125	02 18 n	093 03 w	0.30
01	01	900922	17.78	77	55	71			4	090	01 24 n	091 48 w	3.56
01	02	900922	17.78	69	56	67			4	090	01 24 n	091 46 w	5.93
01	03	900922	17.78	69	56	67	06	01	4	090			5.93
01	04	900922	17.78	56	67	69			4	090			8.89
02	01	900922	18.33	77	55	71	06	02	4	090	01 18 n	091 27 w	2.75
03	01	900922	18.33	77	55	71	06	02	4	090	01 17 n	091 25 w	3.67
03	02	900922	18.33	55	71	77	06	02	4	090			3.36
04	01	900922	16.30	71	77	55	06	03	3	090	01 16 n	091 18 w	2.72
04	02	900922	16.30	69	56	67	06	03	3	090	01 17 n	091 17 w	3.53
01	01	900923	15.74	71	77	55			4	090	01 20 n	089 41 w	11.54
01	02	900923	15.74	77	55	71			4	090			8.92
01	03	900923	15.74	77	55	71	12	02	4	090	01 18 n	089 32 w	1.31
01	04	900923	15.74	55	71	77	01	02	4	060	01 18 n	089 31 w	1.84
02	01	900923	17.78	55	71	77	01	02	4	060	01 18 n	089 29 w	5.04
02	02	900923	17.78	55	71	77			4	060			2.37
02	03	900923	17.78	67	69	56			4	090	01 22 n	089 24 w	11.85
02	04	900923	17.78	69	56	67			4	090			11.85
02	05	900923	17.78	56	67	69			4	090			11.85
02	06	900923	17.78	71	77	55			4	090	01 22 n	089 07 w	8.00
02	07	900923	17.78	71	77	55			5	090			2.37
02	08	900923	17.78	71	77	55	12	01	5	090			1.48
02	09	900923	17.78	77	55	71	12	02	5	090			6.82

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
03	01	900923	17.78	77	55	71	12	12	5	090	01 23 n	088 54 w	2.37
03	02	900923	17.78	55	71	77	12	12	5	090			11.85
03	03	900923	17.78	67	69	56	12	12	5	090	01 23 n	088 47 w	11.85
03	04	900923	17.78	69	56	67	06	01	5	090			11.85
03	05	900923	17.78	56	67	69	06	01	5	090	01 24 n	088 34 w	11.85
03	06	900923	17.78	71	77	55	06	01	4	090	01 24 n	088 27 w	3.26
04	01	900923	17.78	71	77	55	06	01	4	090	01 24 n	088 25 w	0.89
05	01	900923	17.78	77	55	71	06	01	4	090	01 25 n	088 19 w	10.37
05	02	900923	17.78	55	71	77	06	02	4	090			5.04
05	03	900923	17.78	55	71	77			4	090			4.44
05	04	900923	17.78	67	69	56			4	090	01 25 n	088 08 w	5.93
05	05	900923	17.78	67	69	56	06	02	4	090			2.96
05	06	900923	17.78	69	56	67			4	090			8.89
05	07	900923	17.78	56	67	69			4	090	01 24 n	088 58 w	5.93
01	01	900924	20.56	56	67	69			4	088	01 26 n	086 10 w	8.57
02	01	900924	18.15	67	69	56			3	088	01 26 n	086 05 w	1.81
02	02	900924	18.15	67	69	56	12	02	3	088			0.91
02	03	900924	18.15	67	69	56			3	088			3.63
03	01	900924	16.85	69	56	67			4	088	01 26 n	086 00 w	5.34
03	02	900924	16.85	55	71	77			4	088	01 26 n	085 57 w	2.81
03	03	900924	16.85	55	71	77	12	02	4	088			1.97
03	04	900924	16.85	55	71	77			4	088	01 26 n	085 53 w	0.84
04	01	900924	17.41	56	67	69			4	088	01 24 n	085 48 w	9.57
04	02	900924	17.41	67	69	56	01	12	4	088	01 24 n	085 41 w	8.99
04	03	900924	17.41	69	56	67			4	088			4.35
04	04	900924	17.41	69	56	67			4	088			2.90
05	01	900924	17.78	55	71	77			4	088	01 24 n	085 29 w	3.56
06	01	900924	18.33	71	77	55			4	088	01 25 n	085 24 w	4.28
06	02	900924	18.33	71	77	55			4	088			1.83
06	03	900924	18.33	71	77	55	06	01	4	088			4.28
06	04	900924	18.33	77	55	71	06	01	4	088			3.97
06	05	900924	18.33	77	55	71			4	088			5.81
06	06	900924	18.33	56	67	69	06	01	4	088	01 25 n	085 13 w	12.22
06	07	900924	18.33	67	69	56	06	02	4	088			12.22
06	08	900924	18.33	69	56	67	06	02	4	088			7.95
07	01	900924	18.33	55	71	77			4	088	01 26 n	084 54 w	5.81
07	02	900924	18.33	71	77	55			4	088			4.58
07	03	900924	18.33	71	77	55			4	000	01 26 n	084 48 w	3.97
07	04	900924	18.33	77	55	71			4	000			7.33
07	05	900924	18.33	77	55	71			4	000	01 33 n	084 47 w	0.31
01	01	900925	19.82	77	55	71			4	005	03 11 n	084 43 w	3.63
01	02	900925	19.82	77	55	71			4	005			6.28
01	03	900925	19.82	55	71	77			4	005	03 17 n	084 42 w	2.31
01	04	900925	19.82	55	71	77			4	000	03 19 n	084 42 w	7.60
01	05	900925	19.82	71	77	55			4	000			9.91
01	06	900925	19.82	69	56	67			4	000	03 28 n	084 42 w	12.22
02	01	900925	19.45	56	67	69			4	000	03 39 n	084 43 w	8.43
03	01	900925	19.63	67	69	56	03	01	4	000	03 46 n	084 42 w	1.96
04	01	900925	20.00	77	55	71	03	01	4	000	03 52 n	084 40 w	5.00
04	02	900925	20.00	77	55	71			3	000			5.67
04	03	900925	20.00	55	71	77			3	000			2.33
04	04	900925	20.00	55	71	77			3	000	03 59 n	084 40 w	3.67
04	05	900925	20.00	55	71	77	03	01	3	000	04 01 n	084 39 w	1.67
05	01	900925	19.26	71	77	55			4	000	04 05 n	084 39 w	8.35

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
05	02	900925	19.26	69	56	67			4	000	04 09 n	084 38 w	4.17
06	01	900925	18.89	56	67	69			4	000	04 15 n	084 39 w	2.83
07	01	900925	19.26	56	67	69			4	000	04 19 n	084 38 w	2.57
07	02	900925	19.26	56	67	69			4	000	04 21 n	084 38 w	5.78
07	03	900925	19.26	67	69	56	09	01	4	000			4.82
08	01	900925	18.89	77	55	71			4	000	04 33 n	084 37 w	1.57
09	01	900925	19.08	55	71	77			4	000	04 36 n	084 39 w	6.04
10	01	900925	19.26	69	56	67			4	000	04 40 n	084 39 w	8.03
10	02	900925	19.26	56	67	69			4	000			3.85
10	03	900925	19.26	56	67	69			3	000			5.78
10	04	900925	19.26	67	69	56			3	000	04 49 n	084 37 w	6.74
11	01	900925	20.00	77	55	71			3	000	04 54 n	084 36 w	2.00
12	01	900925	19.26	55	71	77			3	000	04 57 n	084 33 w	7.38
01	01	900926	20.74	67	69	56			5	085	05 30 n	083 01 w	2.42
01	02	900926	20.74	67	69	56			5	085			7.95
01	03	900926	20.74	69	56	67			5	085			1.04
02	01	900926	21.11	69	56	67			5	090	05 30 n	082 52 w	0.35
03	01	900926	20.93	69	56	67			5	090	05 30 n	082 51 w	2.79
03	02	900926	20.93	56	67	69			5	090			6.98
03	03	900926	20.93	71	77	55			4	090	05 30 n	082 46 w	2.79
03	04	900926	20.93	71	77	55			4	090			1.40
03	05	900926	20.93	71	77	55	12	02	4	090	05 30 n	082 44 w	1.05
04	01	900926	19.82	77	55	71			4	090	05 29 n	082 36 w	9.91
04	02	900926	19.82	55	71	77			4	090			9.91
04	03	900926	19.82	67	69	56			5	090	05 30 n	082 25 w	13.21
04	04	900926	19.82	69	56	67			5	090			9.91
05	01	900926	20.56	56	67	69			5	090	05 30 n	082 10 w	5.82
05	02	900926	20.56	56	67	69			5	090			5.82
05	03	900926	20.56	71	77	55			4	090	05 31 n	082 04 w	13.70
05	04	900926	20.56	77	55	71			4	090			2.40
06	01	900926	20.37	77	55	71			4	090	05 31 n	081 57 w	2.38
06	02	900926	20.37	55	71	77			4	090			8.83
06	03	900926	20.37	55	71	77			4	090	05 31 n	081 50 w	0.68
07	01	900926	20.00	67	69	56			5	090	05 28 n	081 40 w	2.00
08	01	900926	20.19	67	69	56			5	090	05 28 n	081 37 w	3.36
08	02	900926	20.19	69	56	67			5	090			6.73
08	03	900926	20.19	56	67	69			5	090			7.40
08	04	900926	20.19	71	77	55			4	090	05 28 n	081 28 w	8.41
08	05	900926	20.19	71	77	55	06	02	4	090			1.68
08	06	900926	20.19	77	55	71			4	090			10.09
08	07	900926	20.19	55	71	77			4	090	05 26 n	081 18 w	6.73
01	01	900927	18.33	55	71	77			3	304	07 20 n	082 05 w	1.83
02	01	900927	17.22	71	77	55			3	340	07 21 n	082 07 w	1.15
02	02	900927	17.22	71	77	55			3	304	07 21 n	082 07 w	1.44
03	01	900927	17.59	71	77	55			3	304	07 24 n	082 08 w	2.35
04	01	900927	17.96	77	55	71			3	304	07 25 n	082 09 w	2.69
05	01	900927	16.11	56	67	69	12	02	4	270	07 27 n	082 17 w	1.61
06	01	900927	16.48	55	71	77			4	208	07 30 n	082 21 w	3.57
01	01	900928	17.78	69	56	67			3	320	07 55 n	083 21 w	2.96
01	02	900928	17.78	69	56	67	04	03	3	320			4.74
01	03	900928	17.78	56	67	69	04	03	3	320			8.89
01	04	900928	17.78	67	69	56	04	02	3	320			7.70
01	05	900928	17.78	77	55	71			3	320	08 06 n	083 32 w	10.67
02	01	900928	16.48	55	71	77	05	02	2	270	08 12 n	083 37 w	6.87

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
02	02	900928	16.48	71	77	55	06	01	3	270			4.94
03	01	900928	16.85	69	56	67			3	270	08 10 n	083 44 w	6.18
03	02	900928	17.41	69	56	67	05	01	3	329	08 11 n	083 48 w	2.03
03	03	900928	17.41	56	67	69	05	01	3	329			2.90
04	01	900928	17.22	56	67	69			3	329	08 13 n	083 49 w	1.72
04	02	900928	17.22	67	69	56			2	329			7.18
04	03	900928	17.22	77	55	71			2	329	08 18 n	083 51 w	3.44
04	04	900928	17.22	77	55	71	12	12	2	329			8.04
04	05	900928	17.22	55	71	77			2	329	08 23 n	083 54 w	7.75
04	06	900928	17.04	55	71	77			2	005	08 26 n	083 56 w	1.42
04	07	900928	17.04	55	71	77	07	12	2	005			2.27
04	08	900928	17.04	71	77	55			1	005	08 28 n	083 56 w	3.41
05	01	900928	16.85	71	77	55	08	01	1	005	08 31 n	083 55 w	4.21
01	01	901005	17.78	74	01	76			4	173	08 04 n	084 32 w	5.04
01	02	901005	17.78	74	01	76			4	173			8.59
01	03	901005	17.78	01	76	74			4	173			4.15
02	01	901005	18.15	01	76	74			4	173	07 54 n	084 31 w	4.84
02	02	901005	18.15	01	76	74	07	02	4	173			1.81
02	03	901005	18.15	76	74	01			4	173			2.72
03	01	901005	16.85	01	76	74			4	173	07 22 n	084 24 w	1.69
04	01	901005	16.85	01	76	73			4	173	07 19 n	084 23 w	1.12
04	02	901005	16.85	76	74	01			3	173			4.21
05	01	901005	16.67	74	01	76			4	173	07 15 n	084 22 w	3.33
06	01	901005	16.67	73	22	07			4	173	07 05 n	084 20 w	6.67
06	02	901005	16.67	73	22	07			4	173	07 02 n	084 20 w	0.28
01	01	901006	18.52	22	73	07			5	140	05 20 n	082 48 w	10.80
01	02	901006	18.52	22	73	07			5	140			4.32
01	03	901006	18.52	73	07	22			5	140			10.49
01	04	901006	18.52	73	07	22	11	02	5	140			4.01
01	05	901006	18.52	07	22	73			5	140			15.74
02	01	901006	17.96	01	76	74			5	140	05 02 n	082 31 w	8.38
03	01	901006	18.33	76	74	01			5	140			2.75
03	02	901006	18.33	76	74	01			5	140			3.67
03	03	901006	18.33	74	01	76			5	140	04 53 n	082 21 w	3.36
04	01	901006	18.71	74	01	76			5	140	04 54 n	082 18 w	3.12
04	02	901006	18.71	74	01	76			5	140			1.25
05	01	901006	17.96	22	73	07			5	153	04 44 n	082 09 w	8.38
05	02	901006	17.96	73	07	22			5	153			6.29
06	01	901006	17.96	74	01	76			5	153	04 37 n	081 02 w	11.98
06	02	901006	17.96	01	76	74			5	153			11.98
06	03	901006	17.96	76	74	01			5	153			4.19
06	04	901006	17.59	76	74	01			5	149			7.62
06	05	901006	17.59	22	73	07			5	149	04 24 n	081 52 w	12.32
06	06	901006	17.59	73	07	22			5	149			0.88
07	01	901006	17.59	73	07	22	04	02	5	149	04 16 n	081 47 w	3.23
07	02	901006	17.59	07	22	73	04	02	5	149			13.49
07	03	901006	17.59	74	01	76	04	02	5	149			8.80
07	04	901006	17.59	01	76	74	04	02	5	149			3.23
07	05	901006	17.59	01	76	74	04	02	5	149	04 03 n	081 36 w	0.29
01	01	901007	15.74	76	74	01			5	270	02 59 n	080 35 w	14.43
01	02	901007	15.74	74	01	76			5	270			13.12
01	03	901007	15.74	01	76	74	06	02	5	270			13.12
01	04	901007	15.74	22	07	73	06	01	5	270	03 01 n	081 00 w	10.76
01	05	901007	15.74	73	07	22	07	01	5	270			4.72

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
02	01	901007	16.30	07	73	22	07	01	5	270	03 01 n	081 10 w	4.07
02	02	901007	16.30	73	22	07	07	01	5	270			9.78
02	03	901007	16.30	74	01	76	07	01	5	270	03 01 n	081 18 w	10.87
02	04	901007	16.30	01	76	74	07	01	5	270			0.81
03	01	901007	15.56	01	76	74	07	01	5	270	03 02 n	081 25 w	6.22
03	02	901007	15.56	76	74	01			5	270			4.15
03	03	901007	15.56	76	74	01			4	270			6.48
03	04	901007	15.56	73	07	22	11	01	4	270			10.11
03	05	901007	15.56	07	22	73			4	270			3.63
04	01	901007	16.11	07	22	73			4	270	03 02 n	081 43 w	2.15
04	02	901007	16.11	22	73	07			4	270			10.74
04	03	901007	16.11	01	76	74	11	02	5	270	03 03 n	081 49 w	8.06
04	04	901007	16.11	01	76	74			5	265			2.69
04	05	901007	16.11	76	74	01			5	265			3.76
04	06	901007	16.11	76	74	01	12	01	5	245			3.22
05	01	901007	17.04	74	01	76			5	265	03 04 n	082 00 w	5.40
05	02	901007	17.04	07	22	73			5	265	03 03 n	081 58 w	6.25
06	01	901007	17.04	07	22	73			5	265	03 03 n	082 07 w	1.14
07	01	901007	16.85	22	73	07			5	265	03 03 n	082 07 w	6.46
07	02	901007	16.85	73	07	22			5	265	03 03 n	082 10 w	1.97
07	03	901007	16.85	73	07	22			5	265	03 03 n	082 11 w	0.28
01	01	901008	17.22	22	73	07			5	325	03 03 n	083 37 w	8.90
01	02	901008	17.22	73	07	22			5	325			8.32
01	03	901008	17.22	07	22	73			5	325			8.61
01	04	901008	17.22	22	73	07			5	325	03 16 n	083 45 w	5.17
01	05	901008	17.22	22	73	07	04	02	5	325			2.58
02	01	901008	17.22	22	73	07	04	02	5	325	03 21 n	083 48 w	0.29
03	01	901008	17.41	01	76	74	04	02	5	325	03 25 n	083 46 w	9.28
03	02	901008	17.41	76	74	01	05	01	5	325			11.61
03	03	901008	17.41	74	01	76	05	01	5	325			11.61
03	04	901008	17.41	07	22	73	05	01	5	325	03 40 n	083 56 w	7.54
03	05	901008	17.41	07	22	73	05	01	5	325			1.45
01	01	901009	16.67	74	01	76			5	325	05 55 n	085 22 w	6.67
01	02	901009	16.67	74	01	76			5	325			1.67
01	03	901009	16.67	74	01	76			5	325			1.67
02	01	901009	15.93	01	76	74			5	325	06 01 n	085 22 w	6.37
02	02	901009	15.93	01	76	74			5	325			1.33
02	03	901009	15.93	01	76	74			5	325			2.39
02	04	901009	15.93	01	76	74			5	325	06 06 n	085 25 w	0.27
01	01	901010	18.52	22	73	07			4	328	09 09 n	086 35 w	4.94
01	02	901010	18.52	22	73	07	04	03	4	328			7.72
01	03	901010	18.52	73	07	22	04	03	4	328			4.63
01	04	901010	18.52	73	07	22	04	02	4	328			4.63
02	01	901010	18.52	07	22	73	04	02	4	328	09 24 n	086 43 w	11.73
02	02	901010	18.52	74	01	76	05	02	4	315			4.94
03	01	901010	17.96	74	01	76	05	01	4	315	09 33 n	086 50 w	2.69
03	02	901010	17.96	01	76	74	05	01	4	315			6.29
03	03	901010	17.96	01	76	74	07	01	4	242			5.39
03	04	901010	17.96	76	74	01	07	01	4	242			10.48
03	05	901010	17.96	73	07	22	08	01	4	242			3.59
04	01	901010	16.67	73	07	22	09	01	4	242	09 30 n	086 05 w	1.67
04	02	901010	16.67	07	22	73	09	01	4	242			8.33
05	01	901010	17.04	22	73	07	12	12	4	242	09 28 n	086 10 w	2.27
05	02	901010	17.04	22	73	07	12	12	5	242			8.80

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
05	03	901010	17.04	01	76	74	12	12	5	242	09 26 n	087 16 w	11.36
05	04	901010	17.04	76	74	01	12	01	5	242			2.84
06	01	901010	16.67	76	74	01	12	01	5	242	09 22 n	087 22 w	1.94
06	02	901010	16.67	74	01	76	12	01	4	222			9.17
06	03	901010	16.67	74	01	76	01	01	4	202			1.39
06	04	901010	16.67	74	01	76	01	01	4	222			0.56
06	05	901010	16.67	07	22	73	01	01	4	222	09 15 n	087 28 w	11.11
06	06	901010	16.67	22	73	07	01	02	4	222			11.39
06	07	901010	16.67	73	07	22	01	02	4	222			10.83
06	08	901010	16.67	76	74	01	01	02	4	222	09 01 n	087 40 w	3.33
06	09	901010	17.41	76	74	01	11	02	4	280			6.67
06	10	901010	17.41	74	01	76	11	03	4	280			9.57
06	11	901010	17.41	01	76	74	11	03	4	280			6.38
06	12	901010	17.41	01	76	74	11	03	4	280	09 01 n	087 52 w	0.29
01	01	901011	15.37	76	74	01			4	240	08 24 n	089 13 w	6.92
01	02	901011	15.37	76	74	01	07	03	4	240			4.61
02	01	901011	15.56	74	01	76	08	02	4	206	08 20 n	089 22 w	3.37
02	02	901011	15.56	74	01	76	08	02	4	206			3.89
02	03	901011	15.56	74	01	76	09	02	4	206			1.04
02	04	901011	15.56	01	76	74			4	206			9.33
02	05	901011	15.56	22	73	07			4	206	08 11 n	089 27 w	10.63
02	06	901011	15.56	73	07	22	09	02	4	206			3.63
02	07	901011	15.56	73	07	22	09	01	4	206			6.48
02	08	901011	15.56	07	22	73	09	01	4	206			2.59
03	01	901011	15.37	07	22	73	09	01	4	206	08 00 n	089 31 w	1.79
04	01	901011	16.48	01	76	74			4	215	07 48 n	089 32 w	3.02
04	02	901011	16.48	01	76	74	11	01	5	215			1.92
04	03	901011	16.48	76	74	01			5	215			5.49
04	04	901011	16.48	73	07	22			5	215	07 43 n	089 35 w	7.14
05	01	901011	16.30	07	22	73	01	01	4	215	07 38 n	089 39 w	9.78
05	02	901011	16.30	22	73	07	01	01	4	215			2.72
06	01	901011	15.74	22	73	07	01	01	4	210	07 33 n	089 43 w	4.98
06	02	901011	15.74	01	76	74	01	01	5	200			4.46
07	01	901011	15.93	01	76	74	01	01	5	200	07 28 n	089 44 w	1.06
07	02	901011	15.93	76	74	01	01	02	5	200			6.64
08	01	901011	15.74	76	74	01	01	02	5	200	07 24 n	089 46 w	3.15
08	02	901011	15.74	74	01	76	01	02	5	200			5.25
08	03	901011	15.74	74	01	76	02	02	5	200			4.98
08	04	901011	15.74	07	22	73	02	02	5	205	07 17 n	089 48 w	1.31
09	01	901011	15.74	22	73	07			5	215	07 14 n	089 47 w	0.79
01	01	901012	15.37	73	07	22			5	215	06 10 n	090 20 w	0.77
01	02	901012	15.37	73	07	22	08	03	5	215			11.27
01	03	901012	15.37	07	22	73	08	03	5	215			3.33
01	04	901012	15.37	07	22	73	08	02	5	215			7.43
01	05	901012	15.37	22	73	07			5	215			10.76
01	06	901012	15.37	01	76	74	08	02	5	215	05 53 n	090 32 w	1.28
01	07	901012	15.37	01	76	74	08	02	5	220			1.54
02	01	901012	16.67	76	74	01	09	01	5	220	05 52 n	090 32 w	7.22
02	02	901012	16.67	73	07	22	09	01	5	220			11.11
02	03	901012	16.67	07	22	73	09	01	5	220			6.11
03	01	901012	16.67	07	22	73	10	01	5	220			2.22
03	02	901012	16.67	22	73	07	10	01	5	220	05 38 n	090 40 w	11.67
04	01	901012	15.56	01	76	74	12	01	5	215	05 34 n	090 44 w	6.48
05	01	901012	14.82	76	74	01	12	12	5	215	05 31 n	090 45 w	0.25

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
06	01	901012	15.56	74	01	76	01	01	5	215	05 29 n	090 44 w	3.89
07	01	901012	15.56	74	01	76	01	01	5	215	05 27 n	090 44 w	1.56
07	02	901012	15.56	07	22	73	01	01	5	215			10.37
07	03	901012	15.56	22	73	07	01	01	5	215			10.37
07	04	901012	15.56	73	07	22	01	02	5	215			4.93
08	01	901012	17.04	76	74	01	01	02	4	215	05 14 n	090 57 w	7.95
08	02	901012	17.04	74	01	76	01	02	4	215			8.24
08	03	901012	17.04	01	76	74			4	215			5.68
08	04	901012	17.04	01	76	74	01	03	3	215			1.42
08	05	901012	17.04	22	73	07			3	215			6.25
08	06	901012	17.04	22	73	07			3	215	05 02 n	091 05 w	0.28
01	01	901013	17.22	76	74	01			3	295	04 18 n	092 27 w	7.75
01	02	901013	17.22	76	74	01	05	03	3	295			2.87
01	03	901013	17.22	74	01	76	05	03	3	295			7.46
01	04	901013	17.22	74	01	76	05	03	4	295			4.02
01	05	901013	17.22	01	76	74	05	02	4	295			11.48
01	06	901013	17.22	22	73	07			3	295	04 26 n	092 47 w	5.45
02	01	901013	17.04	22	73	07			3	295	04 27 n	092 48 w	3.12
02	02	901013	17.04	73	07	22			4	295			11.07
02	03	901013	17.04	07	22	73			4	295			4.83
02	04	901013	17.04	07	22	73	06	01	4	295			2.56
03	01	901013	17.04	07	22	73	06	01	4	295	04 33 n	093 00 w	2.84
04	01	901013	18.71	74	01	76	12	12	4	295	04 34 n	093 03 w	10.60
04	02	901013	18.71	01	76	74	12	12	4	295	04 36 n	093 09 w	9.35
04	03	901013	18.71	76	74	01	12	12	4	295			9.35
04	04	901013	18.71	73	07	22	12	12	4	295	04 40 n	093 20 w	10.29
05	01	901013	18.89	07	22	73	10	01	4	300	04 42 n	093 26 w	12.28
05	02	901013	18.89	22	73	07	10	01	4	300			10.07
05	03	901013	18.89	01	76	74	10	01	4	300	04 48 n	093 38 w	12.59
05	04	901013	18.89	01	76	74	11	01	4	300			12.59
05	05	901013	18.89	74	01	76	11	01	4	300			6.30
05	06	901013	18.89	74	01	76			4	300			6.30
05	07	901013	18.89	07	22	73			4	300	04 58 n	093 55 w	9.45
05	08	901013	18.89	22	73	07			3	300			2.20
05	09	901013	18.89	22	73	07			3	045			7.24
05	10	901013	18.89	73	07	22			3	045	05 04 n	093 58 w	9.45
06	01	901013	18.89	76	74	01			3	045	05 09 n	093 51 w	4.41
06	02	901013	18.89	76	74	01			3	045	05 10 n	093 49 w	0.31
01	01	901014	17.78	07	22	73			4	040	06 14 n	092 34 w	2.67
01	02	901014	17.78	07	22	73			4	040			4.15
01	03	901014	17.78	07	22	73	02	03	4	040			4.15
01	04	901014	17.78	22	73	07	02	03	4	040			6.82
02	01	901014	18.52	73	07	22	02	02	4	040	06 25 n	092 20 w	3.70
02	02	901014	18.52	76	74	01	02	02	4	040			6.79
03	01	901014	19.26	74	01	76			4	040	06 31 n	092 15 w	11.56
03	02	901014	19.26	74	01	76			4	020			1.28
03	03	901014	19.26	01	76	74			4	020			5.14
03	04	901014	19.26	01	76	74			4	040			6.42
03	05	901014	19.26	22	73	07	03	01	4	040			3.53
04	01	901014	18.89	22	73	07	03	01	4	030	06 44 n	092 04 w	1.57
05	01	901014	18.89	73	07	22	03	01	4	030	06 44 n	092 03 w	1.26
06	01	901014	18.89	07	22	73	12	12	4	030	06 45 n	091 58 w	5.98
06	02	901014	18.89	74	01	76	12	12	4	030	06 48 n	091 54 w	6.30
06	03	901014	18.89	74	01	76			4	030			3.78

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
07	01	901014	18.89	01	76	74			4	030	06 54 n	091 50 w	2.52
08	01	901014	18.89	76	74	01			4	030	06 58 n	091 46 w	10.39
08	02	901014	18.89	73	07	22	07	01	4	030	07 02 n	091 43 w	5.04
08	03	901014	18.89	73	07	22	07	01	3	030	07 04 n	091 42 w	7.56
08	04	901014	18.89	07	22	73	07	02	4	030			12.59
08	05	901014	18.89	22	73	07	07	02	4	030			4.41
09	01	901014	18.71	01	76	74	07	02	4	030	07 20 n	091 30 w	5.92
10	01	901014	19.26	76	74	01	08	03	4	030	07 26 n	091 26 w	6.42
11	01	901014	19.82	73	07	22			3	038	07 25 n	091 26 w	2.64
11	02	901014	19.82	73	07	22			3	038	07 25 n	091 25 w	0.33
01	01	901015	19.82	74	01	76			3	045	08 42 n	090 19 w	1.65
02	01	901015	19.82	74	01	76	02	03	3	045	08 46 n	090 15 w	0.99
03	01	901015	19.82	01	76	74	02	03	3	045	08 50 n	090 14 w	0.99
04	01	901015	18.71	01	76	74	02	02	3	045	08 50 n	090 10 w	0.94
04	02	901015	18.71	76	74	01	02	02	4	045			4.36
05	01	901015	18.15	76	74	01	02	02	4	045	08 51 n	090 09 w	4.84
05	02	901015	18.15	73	07	22	02	02	4	045	08 53 n	090 07 w	12.10
05	03	901015	18.15	07	22	73			4	045			12.10
05	04	901015	18.15	22	73	07	02	01	4	045			12.10
05	05	901015	18.15	01	76	74			4	045	09 09 n	089 52 w	4.23
05	06	901015	18.15	01	76	74	02	01	5	045			6.05
05	07	901015	18.15	01	76	74	02	01	5	045			1.81
05	08	901015	18.15	76	74	01			4	045			4.84
05	09	901015	18.15	76	74	01	03	01	4	045	09 17 n	089 44 w	7.26
05	10	901015	18.15	74	01	76	12	12	4	045			9.98
05	11	901015	18.15	74	01	76	12	12	3	045			2.12
05	12	901015	18.15	07	22	73	05	01	4	045	09 24 n	089 38 w	12.10
05	13	901015	18.15	22	73	07	06	01	4	045			2.12
06	01	901015	18.52	22	73	07	06	01	3	045	09 30 n	089 32 w	8.03
06	02	901015	18.52	73	07	22	06	01	3	045			2.78
07	01	901015	18.52	73	07	22	06	01	3	045	09 34 n	089 27 w	3.09
08	01	901015	18.15	76	74	01	07	01	3	045	09 38 n	089 23 w	10.59
08	02	901015	18.15	74	01	76	07	01	3	045			5.44
08	03	901015	18.15	74	01	76	07	02	2	045			6.65
09	01	901015	18.52	01	76	74	07	02	2	045	09 47 n	089 14 w	2.47
09	02	901015	18.52	01	76	74	07	02	2	045			4.01
10	01	901015	18.33	22	73	07	07	02	2	045	09 51 n	089 10 w	3.06
11	01	901015	19.26	73	07	22	07	02	1	045	09 53 n	089 03 w	0.64
01	01	901016	13.33	07	22	73			3	307	11 02 n	088 04 w	2.44
01	02	901016	13.33	07	22	73	05	03	4	307			2.22
01	03	901016	13.33	07	22	73	05	03	4	307			3.33
02	01	901016	18.71	76	74	01	06	01	3	310	11 09 n	088 22 w	5.61
03	01	901016	18.89	73	07	22	07	01	3	310	11 08 n	088 31 w	8.19
03	02	901016	18.89	07	22	73	08	01	4	310			6.93
03	03	901016	20.74	74	01	76	08	01	3	310	11 12 n	088 39 w	12.79
04	01	901016	20.37	01	76	74	08	01	3	310	11 18 n	088 47 w	9.85
04	02	901016	20.37	76	74	01	10	01	3	310			8.83
04	03	901016	20.37	73	07	22	10	01	3	310			7.13
05	01	901016	20.37	73	07	22	10	02	3	310	11 26 n	088 58 w	3.06
05	02	901016	20.37	07	22	73			3	310			5.09
05	03	901016	20.37	07	22	73	10	02	3	310			6.11
05	04	901016	20.37	07	22	73			2	310			2.38
05	05	901016	20.37	22	73	07			2	310			4.75
05	06	901016	20.37	22	73	07			2	310			4.07

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
05	07	901016	20.37	22	73	07			2	310	11 35 n	089 10 w	0.68
01	01	901017	19.26	74	01	76	08	03	3	235	11 16 n	090 47 w	3.53
01	02	901017	19.26	74	01	76			3	235			3.53
01	03	901017	19.26	74	01	76			4	235			4.17
02	01	901017	16.30	01	76	74			4	245	11 13 n	090 53 w	8.15
02	02	901017	16.30	76	74	01			4	245			1.63
03	01	901017	17.78	73	07	22			2	245	11 09 n	090 51 w	10.07
03	02	901017	17.78	07	22	73			4	245			3.26
04	01	901017	18.33	22	73	07			4	235	11 09 n	091 09 w	9.78
04	02	901017	18.33	01	76	74			4	235	11 06 n	091 13 w	12.22
04	03	901017	18.33	76	74	01			4	235			6.11
04	04	901017	18.33	76	74	01	09	01	4	235	11 00 n	091 25 w	6.11
04	05	901017	18.33	74	01	76	10	01	4	235			12.22
04	06	901017	18.33	07	22	73	10	01	4	235	10 55 n	091 32 w	1.83
04	07	901017	18.33	07	22	73			4	235			2.44
04	08	901017	18.33	07	22	73	10	01	4	235			0.61
05	01	901017	17.78	22	73	07	11	01	4	235	10 50 n	091 36 w	5.04
05	02	901017	17.78	22	73	07			4	235			2.96
05	03	901017	17.78	73	07	22			3	235			6.82
06	01	901017	19.82	73	07	22			3	235			3.96
06	02	901017	19.82	76	74	01			3	235	10 43 n	091 47 w	13.21
06	03	901017	19.82	74	01	76	12	02	4	235			6.94
06	04	901017	19.82	74	01	76	01	02	4	215	10 38 n	091 56 w	6.28
06	05	901017	19.82	01	76	74	01	02	4	215			0.66
07	01	901017	18.33	01	76	74			4	215	10 36 n	092 00 w	4.89
07	02	901017	18.33	22	73	07			3	215	10 34 n	092 03 w	9.47
07	03	901017	18.33	73	07	22	02	02	3	215			3.06
08	01	901017	18.33	07	22	73			3	215	10 24 n	092 07 w	2.44
08	02	901017	18.33	07	22	73	01	03	3	215			3.36
08	03	901017	18.33	74	01	76	01	03	3	215			5.19
08	04	901017	18.33	74	01	76	01	03	3	215	10 20 n	092 11 w	0.31
01	01	901018	16.11	22	73	07	07	03	4	240	09 36 n	093 42 w	1.61
02	01	901018	14.26	22	73	07			4	240	09 35 n	093 42 w	5.47
02	02	901018	14.26	73	07	22			5	240			4.04
03	01	901018	17.04	76	74	01			4	240	09 31 n	093 54 w	9.94
03	02	901018	17.04	74	01	76			4	240			8.52
04	01	901018	16.48	01	76	74			4	240	09 24 n	094 05 w	5.22
04	02	901018	16.48	22	73	07			4	240			5.49
04	03	901018	16.48	22	73	07			5	240			1.92
05	01	901018	16.30	73	07	22			5	240	09 19 n	094 13 w	4.89
05	02	901018	16.30	73	07	22	09	01	4	240			6.52
05	03	901018	16.30	07	22	73			5	240			1.36
05	04	901018	16.30	07	22	73			5	240			1.36
06	01	901018	17.78	73	07	22	12	02	4	245	08 58 n	094 52 w	0.89
06	02	901018	17.78	73	07	22	01	02	4	225			2.96
06	03	901018	17.78	73	07	22	01	02	4	225	08 55 n	094 54 w	0.30
01	01	901020	15.74	73	07	22			5	242	07 07 n	098 45 w	3.94
02	01	901020	15.74	07	22	73			5	242	07 03 n	098 50 w	4.20
02	02	901020	15.74	07	22	73			5	255			0.79
02	03	901020	15.74	74	01	76			5	255			9.97
03	01	901020	15.19	01	76	74			5	255	07 00 n	098 58 w	7.34
03	02	901020	15.19	76	74	01	07	01	5	255			6.33
03	03	901020	15.19	73	07	22	07	01	5	255			10.12
03	04	901020	15.19	07	22	73	08	01	5	255			10.12

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
03	05	901020	15.19	22	73	07	08	01	5	255	06 52 n	099 18 w	8.35
03	06	901020	15.19	22	73	07			5	265			1.77
03	07	901020	15.19	01	76	74			5	265	06 52 n	099 20 w	1.27
04	01	901020	14.26	07	22	73	11	01	5	265	06 51 n	099 36 w	8.79
04	02	901020	14.26	22	73	07	11	01	5	265			9.03
04	03	901020	14.26	73	07	22	11	02	5	265			8.32
04	04	901020	14.26	76	74	01	11	02	5	265	06 51 n	099 54 w	0.95
04	05	901020	14.26	76	74	01	11	02	5	275			6.18
04	06	901020	14.26	74	01	76	11	02	5	275			7.13
04	07	901020	14.26	01	76	74	11	02	5	275			6.42
04	08	901020	14.26	01	76	74			5	255			0.95
04	09	901020	14.26	22	73	07			5	255			4.99
04	10	901020	14.26	73	07	22			5	255			5.23
04	11	901020	14.26	73	07	22			5	255	06 52 n	100 07 w	0.24
01	01	901021	12.96	76	74	01			5	040	08 10 n	098 50 w	4.11
02	01	901021	15.74	73	07	22			5	040	08 18 n	098 44 w	6.82
03	01	901021	18.89	07	22	73			5	040	08 24 n	098 39 w	7.56
03	02	901021	18.89	22	73	07			4	040			6.93
04	01	901021	19.45	01	76	74			5	040	08 31 n	098 31 w	0.65
05	01	901021	19.26	76	74	01	03	01	5	040	08 31 n	098 26 w	8.03
05	02	901021	19.26	74	01	76			5	040			10.91
05	03	901021	19.26	74	01	76			5	040			1.93
05	04	901021	19.26	07	22	73			5	040	08 38 n	098 18 w	9.95
06	01	901021	19.08	22	73	07	06	01	5	040	08 45 n	098 09 w	4.77
06	02	901021	19.08	73	07	22	06	01	5	040			11.76
06	03	901021	19.08	76	74	01	06	01	5	040	08 51 n	098 02 w	4.77
06	04	901021	13.70	76	74	01	06	01	5	040			5.71
06	05	901021	13.70	74	01	76	07	01	5	040			5.48
06	06	901021	13.70	74	01	76			5	040	08 57 n	097 57 w	3.65
06	07	901021	13.70	01	76	74			5	040			2.51
07	01	901021	13.70	01	76	74			5	040	09 01 n	097 53 w	2.28
08	01	901021	13.70	22	73	07			5	040	09 02 n	097 53 w	1.37
09	01	901021	13.33	22	73	07			5	040	09 04 n	097 51 w	2.00
09	02	901021	13.33	73	07	22			5	040			2.44
10	01	901021	13.33	74	01	76			5	040	09 10 n	097 44 w	4.89
01	01	901022	14.45	07	22	73			5	060	10 01 n	096 44 w	3.37
01	02	901022	14.45	07	22	73			5	060			3.13
01	03	901022	14.45	22	73	07			5	060			7.22
01	04	901022	14.45	73	07	22			5	060			3.13
02	01	901022	12.96	76	74	01			5	060	10 08 n	096 36 w	3.46
02	02	901022	12.96	76	74	01			5	060			1.73
02	03	901022	12.96	74	01	76			5	060			9.29
02	04	901022	12.96	01	76	74			5	060			7.56
02	05	901022	12.96	22	73	07	02	01	5	060	10 14 n	096 26 w	2.16
02	06	901022	12.96	22	73	07			5	060			6.48
02	07	901022	12.96	73	07	22			5	060			0.65
03	01	901022	13.33	73	07	22			5	060	10 18 n	096 20 w	2.22
03	02	901022	13.33	73	07	22			4	060			3.11
03	03	901022	13.33	07	22	73	03	01	5	060			3.33
03	04	901022	13.33	07	22	73			5	060	10 19 n	096 16 w	0.67
03	05	901022	13.33	07	22	73	03	01	5	060			0.89
03	06	901022	13.33	07	22	73	04	01	5	060			4.00
03	07	901022	13.33	74	01	76			5	060			3.56
04	01	901022	13.33	74	01	76	12	12	5	060	10 23 n	096 11 w	4.89

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
04	02	901022	13.33	01	76	74	12	12	5	060			7.78
04	03	901022	13.33	76	74	01			5	095			2.00
04	04	901022	13.33	76	74	01			5	060			3.56
05	01	901022	13.52	73	07	22			5	060	10 29 n	096 00 w	6.99
05	02	901022	13.52	07	22	73	06	01	5	060			5.63
05	03	901022	13.52	07	22	73	06	02	5	060			3.38
05	04	901022	13.52	22	73	07	06	02	5	060			9.01
05	05	901022	13.52	01	74	76	06	02	5	060	10 36 n	095 49 w	6.76
05	06	901022	13.52	76	74	01	07	02	5	060			6.76
05	07	901022	13.52	74	01	76			5	060			6.76
05	08	901022	13.52	07	22	73			5	060			3.38
05	09	901022	13.52	07	22	73			5	060	10 44 n	096 37 w	0.23
01	01	901023	13.52	01	76	74			3	060			8.34
01	02	901023	13.52	76	74	01			3	060			2.93
01	03	901023	13.52	76	74	01	02	03	3	060	11 32 n	094 11 w	4.96
01	04	901023	13.52	74	01	76	02	02	3	060			7.89
01	05	901023	13.52	07	22	73	02	02	3	060	11 36 n	094 05 w	9.01
01	06	901023	13.52	22	73	07	02	02	3	060			2.25
02	01	901023	18.71	22	73	07	02	02	3	060	11 39 n	093 58 w	5.30
03	01	901023	19.08	73	07	22	02	02	3	060	11 39 n	093 56 w	12.08
03	02	901023	19.08	76	74	01	02	01	3	060	11 42 n	093 50 w	9.54
03	03	901023	19.08	76	74	01	02	01	4	060			3.18
03	04	901023	19.08	74	01	76	02	01	4	060			9.22
04	01	901023	17.41	74	01	76	03	01	3	060	11 47 n	093 41 w	2.90
04	02	901023	17.41	01	76	74	03	01	3	060			9.57
04	03	901023	17.41	22	73	07			3	060	11 50 n	093 35 w	2.61
04	04	901023	17.41	22	73	07	04	01	3	055			9.28
04	05	901023	17.41	73	07	22	05	01	3	055			3.19
04	06	901023	17.41	73	07	22	05	01	3	055	11 55 n	093 28 w	1.45
04	07	901023	17.41	73	07	22	05	01	3	055			6.67
04	08	901023	17.41	07	22	73			3	055			2.90
05	01	901023	18.33	07	22	73			3	055	12 00 n	093 21 w	4.89
05	02	901023	18.33	74	01	76	06	01	3	055	12 00 n	093 19 w	9.17
05	03	901023	18.33	74	01	76	06	01	3	055			3.06
05	04	901023	18.33	01	76	74	06	01	3	055			3.06
06	01	901023	17.96	76	74	01			3	055	12 08 n	093 06 w	8.98
06	02	901023	17.96	73	07	22	07	02	3	055	12 11 n	093 00 w	0.90
06	03	901023	17.96	73	07	22	07	02	3	050			8.08
06	04	901023	17.96	07	22	73	07	02	3	050			5.99
06	05	901023	17.96	07	22	73	07	03	2	050			2.99
06	06	901023	17.96	22	73	07	07	03	2	050			5.09
07	01	901023	18.71	22	73	07	07	03	1	050	12 19 n	093 00 w	3.43
07	02	901023	18.71	01	76	74	07	03	1	050			6.86
07	03	901023	18.71	01	76	74			1	050	12 23 n	092 44 w	0.31
01	01	901024	18.52	22	73	07			2	055	13 37 n	091 18 w	3.40
01	02	901024	18.52	22	73	07	02	03	2	055			3.40
02	01	901024	18.71	22	73	07	02	03	2	060	13 40 n	091 11 w	1.25
03	01	901024	18.71	73	07	22	02	03	2	060	13 42 n	091 08 w	4.36
03	02	901024	18.71	73	07	22	02	02	2	060			4.68
03	03	901024	18.71	07	22	73	02	02	2	060			12.47
03	04	901024	16.85	07	22	73	02	02	2	060	13 48 n	091 03 w	0.28
01	01	901028	17.22	07	22	73	10	01	1	258	13 51 n	091 03 w	11.20
01	02	901028	17.22	22	73	07	10	01	2	258			1.72
02	01	901028	19.08	22	73	07	10	01	2	258	13 50 n	091 13 w	9.54

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
02	02	901028	19.08	73	07	22	11	01	2	258			10.49
03	01	901028	19.08	76	74	01	11	01	2	258	13 48 n	091 26 w	1.59
04	01	901028	20.19	74	01	76	11	02	2	258	13 45 n	091 28 w	13.46
04	02	901028	20.19	74	01	76	11	02	2	268			3.03
04	03	901028	20.19	01	76	74	11	02	2	278			6.06
04	04	901028	20.19	22	73	07	11	02	1	278	13 44 n	091 42 w	10.09
04	05	901028	20.19	73	07	22	11	03	1	278			10.09
04	06	901028	20.19	07	22	73	11	03	2	278	13 46 n	091 53 w	8.41
04	07	901028	20.19	07	22	73			3	278			1.68
04	08	901028	20.19	74	01	76			3	278			1.35
04	09	901028	20.19	74	01	07			3	278			3.70
04	10	901028	20.19	74	01	07			3	278	13 48 n	092 03 w	0.34
01	01	901030	17.96	07	01	74			3	276	15 40 n	097 52 w	3.29
01	02	901030	17.96	07	01	74	06	03	3	276			6.29
01	03	901030	17.96	01	74	07	06	03	3	276			6.59
01	04	901030	17.96	01	74	07	06	03	4	276			5.39
01	05	901030	17.96	73	07	01	06	02	3	276			13.47
01	06	901030	17.96	22	01	73	07	02	3	276			7.19
01	07	901030	17.96	22	01	07	07	02	3	276			4.19
01	08	901030	17.96	07	74	22	07	02	3	276	15 42 n	098 19 w	2.69
01	09	901030	17.96	07	73	22	07	02	2	276			5.09
02	01	901030	19.08	74	22	07	07	02	2	276	15 42 n	098 24 w	9.54
02	02	901030	19.08	01	07	74	07	01	2	276			15.90
02	03	901030	19.08	73	74	01	08	01	2	276			9.22
03	01	901030	19.08	22	01	73	08	01	2	276	15 46 n	098 46 w	9.54
03	02	901030	19.08	07	73	22	09	01	2	276			7.63
04	01	901030	19.45	74	01	07	09	01	2	276	15 49 n	098 56 w	4.54
05	01	901030	18.52	01	07	74	09	01	2	276	15 46 n	099 01 w	2.78
06	01	901030	18.71	73	74	01	11	02	2	276	15 48 n	099 06 w	1.87
06	02	901030	18.71	73	74	01	11	02	2	284			1.56
06	03	901030	18.71	73	74	01	11	02	2	276			1.87
06	04	901030	18.71	22	01	73	11	02	2	276			11.53
07	01	901030	17.96	74	22	07	11	02	3	276	15 53 n	099 17 w	6.29
08	01	901030	18.52	01	07	74	11	03	3	276	15 54 n	099 22 w	3.70
09	01	901030	17.78	01	07	74	11	03	3	276	15 54 n	099 24 w	6.52
09	02	901030	17.78	73	74	01	11	03	3	276			7.70
09	03	901030	17.78	73	74	01	11	03	3	276	15 55 n	099 31 w	0.30
01	01	901031	17.41	22	73	07	06	03	2	280	16 09 n	101 06 w	8.70
02	01	901031	14.82	22	73	07	06	03	2	280	16 09 n	101 10 w	1.48
02	02	901031	14.82	73	07	22	06	03	2	280			2.72
03	01	901031	14.82	73	07	22	06	02	2	280	16 08 n	101 14 w	2.72
03	02	901031	14.82	07	22	73	06	02	2	280			8.64
03	03	901031	14.82	07	22	73	07	02	2	280			2.47
03	04	901031	14.82	74	01	76	07	02	2	280	16 09 n	101 23 w	5.68
03	05	901031	14.82	74	01	76	07	02	2	275			1.48
04	01	901031	15.37	01	76	74	07	02	2	280	16 12 n	101 30 w	6.15
05	01	901031	16.11	76	74	01	07	01	2	280	16 13 n	101 32 w	9.40
06	01	901031	17.78	73	07	22	08	01	2	280	16 17 n	101 49 w	5.33
07	01	901031	17.96	07	22	73	09	01	2	280	16 18 n	101 54 w	8.38
07	02	901031	17.96	74	01	76	09	01	2	280	16 19 n	101 58 w	12.58
07	03	901031	17.96	01	76	74	10	01	2	280			11.38
07	04	901031	17.96	76	74	01	10	01	2	280			5.69
08	01	901031	18.15	73	07	22	11	02	2	270	16 22 n	102 17 w	2.12
09	01	901031	18.15	73	07	22	11	02	2	270	16 22 n	102 18 w	4.84

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
09	02	901031	18.15	07	22	73	11	02	2	270			1.81
10	01	901031	18.15	07	22	73	11	02	2	270	16 22 n	102 22 w	1.51
11	01	901031	17.22	22	73	07	11	02	2	270	16 23 n	102 24 w	2.87
12	01	901031	17.04	22	73	07	11	02	2	270	16 22 n	102 26 w	1.70
13	01	901031	17.41	01	76	74	11	03	2	270	16 24 n	102 28 w	4.93
14	01	901031	18.15	76	74	01	11	03	2	270	16 25 n	102 38 w	6.05
01	01	901101	22.22	76	74	01			1	000	16 24 n	104 23 w	6.67
01	02	901101	22.22	76	74	01	03	03	2	000			1.85
02	01	901101	14.45	76	74	01	03	03	2	000	16 29 n	104 21 w	1.69
02	02	901101	14.45	74	01	76	03	03	1	000			1.93
03	01	901101	15.93	74	01	76	03	03	1	000	16 34 n	104 22 w	3.72
03	02	901101	15.93	01	76	74	03	02	1	000			10.62
04	01	901101	16.30	22	73	07	03	02	1	000	16 46 n	104 21 w	2.72
04	02	901101	16.30	22	73	07	03	02	3	000			4.89
04	03	901101	16.30	73	07	22	04	02	3	000			3.80
05	01	901101	16.67	07	22	73	05	01	3	000	16 53 n	104 20 w	6.11
05	02	901101	16.67	74	01	76	05	01	3	000			11.11
05	03	901101	16.67	01	76	74	05	01	3	000			11.11
05	04	901101	16.67	76	74	01	06	01	3	000			11.11
05	05	901101	16.67	73	07	22	06	01	3	000	17 14 n	104 18 w	3.89
06	01	901101	17.22	07	22	73	07	01	3	000	17 16 n	104 18 w	11.77
06	02	901101	17.22	22	73	07	07	01	3	000			11.48
06	03	901101	17.22	01	76	74	08	02	3	000	17 30 n	104 17 w	11.48
06	04	901101	17.22	76	74	01	08	02	3	000			10.33
07	01	901101	16.85	74	01	76	08	02	3	000	17 42 n	104 16 w	1.69
08	01	901101	17.22	74	01	76	08	02	3	000	17 45 n	104 17 w	2.58
08	02	901101	17.22	07	22	73	08	02	3	000	17 46 n	104 17 w	8.61
08	03	901101	17.22	22	73	07	08	03	3	000			5.74
08	04	901101	17.22	22	73	07	08	03	2	000			2.87
08	05	901101	17.22	73	07	22	09	03	2	000			4.88
08	06	901101	17.22	73	07	22	09	03	2	000	17 59 n	104 17 w	0.29
01	01	901108	17.22	74	01	76			5	217	18 10 n	105 00 w	7.18
01	02	901108	17.22	74	01	76	09	03	5	217			4.88
01	03	901108	17.22	01	76	74	09	03	5	217			11.48
01	04	901108	17.22	76	74	01	09	02	5	217			11.48
01	05	901108	17.22	73	07	22	09	02	5	217	17 54 n	105 13 w	1.15
01	06	901108	17.22	73	07	22	08	02	5	227			3.16
02	01	901108	17.96	73	07	22	08	02	5	227	17 50 n	105 14 w	4.79
02	02	901108	17.96	07	22	73	09	02	5	227			11.98
02	03	901108	17.96	22	73	07	09	02	5	217			11.98
02	04	901108	17.96	01	76	74	09	01	5	217	17 40 n	105 28 w	11.98
02	05	901108	17.96	76	74	01	09	01	5	210			11.98
02	06	901108	17.96	74	01	76	10	01	4	210			11.98
02	07	901108	17.96	07	22	73	11	01	4	210	17 23 n	105 39 w	9.88
02	08	901108	17.96	07	22	73	01	01	4	173			2.40
02	09	901108	17.96	22	73	07	01	01	4	173			3.29
03	01	901108	17.04	73	07	22	01	01	4	184	17 14 n	105 44 w	8.24
03	02	901108	17.04	76	74	01	02	02	4	184	17 10 n	105 45 w	7.38
04	01	901108	17.04	74	01	76	02	02	4	184	17 05 n	105 47 w	8.80
04	02	901108	17.04	01	76	74	02	02	4	184			3.41
05	01	901108	17.22	22	73	07	02	03	4	184	16 54 n	105 51 w	2.58
06	01	901108	16.67	73	07	22	02	03	4	184	16 49 n	105 49 w	3.06
01	01	901109	17.04	22	73	07			3	182	15 27 n	105 51 w	4.83
01	02	901109	17.04	22	73	07	10	03	3	182			5.40

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
01	03	901109	17.04	73	07	22	10	03	3	182			2.84
01	04	901109	17.04	73	07	22	10	03	3	182			8.24
01	05	901109	17.04	07	22	73	10	02	4	182			5.96
02	01	901109	16.11	74	01	76	10	02	4	182	15 11 n	105 53 w	9.94
02	02	901109	16.11	01	76	74	10	02	4	182			3.76
03	01	901109	16.30	01	76	74	10	02	4	182	15 02 n	105 55 w	4.62
03	02	901109	16.30	76	74	01	10	02	4	182			10.87
03	03	901109	16.30	22	07	01	11	01	4	182	14 54 n	105 55 w	2.17
03	04	901109	16.30	73	07	22	11	01	4	182			8.69
03	05	901109	16.30	07	22	73	11	01	4	182			10.87
03	06	901109	16.30	22	73	07	11	01	4	182			2.17
03	07	901109	16.30	22	73	07	12	01	4	182			8.69
03	08	901109	16.30	01	76	74	01	01	4	162	14 37 n	106 00 w	7.06
03	09	901109	16.30	01	76	74	01	01	4	162			3.80
03	10	901109	16.30	76	74	01	01	01	4	162			2.72
04	01	901109	16.30	76	74	01	01	01	4	184	14 26 n	105 55 w	2.17
05	01	901109	16.30	07	22	73	02	02	4	184	14 24 n	105 57 w	9.78
06	01	901109	17.22	22	73	07			4	184	14 18 n	106 00 w	9.76
06	02	901109	17.22	22	73	07	02	02	4	184			10.91
06	03	901109	17.22	76	74	01	02	02	4	184			3.16
07	01	901109	16.48	74	01	76	02	03	4	184	13 59 n	106 01 w	7.42
07	02	901109	16.48	74	01	76	02	03	4	184	13 54 n	106 01 w	0.27
01	01	901110	17.78	01	76	74			5	195	12 24 n	106 27 w	5.04
01	02	901110	17.78	01	76	74	09	03	5	195			4.15
01	03	901110	17.78	01	76	74	09	03	5	195			4.15
01	04	901110	17.78	76	74	01	09	03	5	195			1.78
02	01	901110	18.33	74	01	76	09	02	4	195	12 11 n	106 30 w	3.67
03	01	901110	16.30	07	22	73	10	02	4	195	12 03 n	106 25 w	4.35
03	02	901110	16.30	07	22	73	09	02	4	200			4.89
03	03	901110	16.30	22	73	07	09	02	4	200	11 59 n	106 26 w	2.99
04	01	901110	16.48	76	74	01	10	01	4	200	11 54 n	106 35 w	10.99
04	02	901110	16.48	74	01	76	10	01	3	200			8.24
04	03	901110	16.48	74	01	76	11	01	3	200			2.75
04	04	901110	16.48	01	76	74	11	01	2	200			5.49
05	01	901110	16.11	22	73	07	12	01	3	200	11 37 n	106 44 w	8.06
05	02	901110	16.11	73	07	22	11	01	3	240			10.47
05	03	901110	16.11	07	22	73	11	01	3	240			7.52
06	01	901110	16.67	74	01	76	01	01	3	190	11 29 n	106 58 w	2.78
07	01	901110	16.48	01	76	74	01	02	3	190	11 25 n	107 04 w	4.67
08	01	901110	16.11	76	74	01	01	02	3	190	11 21 n	107 05 w	7.79
08	02	901110	16.11	73	07	22	02	02	3	190	11 17 n	107 05 w	7.79
08	03	901110	16.11	07	22	73	02	03	3	190			5.91
08	04	901110	16.11	07	22	73	02	03	2	190			0.27
09	01	901110	14.82	07	22	73	01	03	2	230	11 09 n	107 08 w	0.74
09	02	901110	14.82	22	73	07	01	03	2	230			7.41
09	03	901110	14.82	01	76	74	01	03	2	230			2.47
01	01	901111	15.56	22	73	07			1	250	10 31 n	108 35 w	5.70
01	02	901111	15.56	22	73	07			2	250			0.78
02	01	901111	18.15	73	07	22	07	03	2	250	10 29 n	108 41 w	11.19
02	02	901111	18.15	07	22	73	07	02	1	250			11.80
02	03	901111	18.15	74	01	76	07	02	1	250			8.17
02	04	901111	18.15	74	01	76	07	02	1	250	10 22 n	108 57 w	0.30
01	01	901112	18.15	01	76	74			2	240	09 27 n	110 48 w	10.28
01	02	901112	18.15	76	74	01	08	03	3	240			9.07

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
01	03	901112	18.15	74	01	76	08	02	3	245	09 21 n	110 58 w	12.10
01	04	901112	18.15	07	22	73	08	02	3	245	09 17 n	111 04 w	12.10
01	05	901112	18.15	22	73	07	08	02	3	245			6.35
01	06	901112	18.15	22	73	07	08	02	4	245	09 14 n	111 13 w	6.35
01	07	901112	18.15	73	07	22	08	02	4	245			5.44
01	08	901112	18.15	73	07	22	08	01	4	245			6.05
01	09	901112	18.15	76	74	01	08	01	3	245	09 09 n	111 22 w	12.10
01	10	901112	18.15	74	01	76	08	01	3	245			12.10
01	11	901112	18.15	01	76	74	09	01	3	245			12.10
01	12	901112	18.15	22	73	07	10	01	3	245	09 00 n	111 40 w	12.40
01	13	901112	18.15	73	07	22	10	01	3	245			9.68
01	14	901112	18.15	73	07	22	11	01	3	245			2.12
02	01	901112	18.71	74	01	76	12	01	3	245	08 49 n	111 53 w	1.87
03	01	901112	19.08	74	01	76	11	01	3	255	08 45 n	111 58 w	10.81
03	02	901112	19.08	01	76	74	11	02	3	255	08 44 n	112 03 w	9.54
03	03	901112	19.08	76	74	01	11	02	3	265			9.54
03	04	901112	19.08	73	07	22	01	02	3	220	08 42 n	112 14 w	9.54
03	05	901112	19.08	07	22	73	01	02	3	220			9.54
03	06	901112	19.08	22	73	07	01	03	3	220	08 34 n	112 20 w	9.54
03	07	901112	19.08	01	76	74	01	03	3	220			11.45
03	08	901112	19.08	01	76	74			3	220	08 25 n	112 27 w	0.32
01	01	901113	17.59	73	07	22			5	180	07 05 n	113 12 w	5.86
01	02	901113	17.59	73	07	22			5	180			2.35
01	03	901113	17.59	07	22	73			5	180			8.21
01	04	901113	17.59	22	73	07	10	02	5	180			7.62
01	05	901113	17.59	01	76	74			5	180	06 52 n	113 12 w	6.74
01	06	901113	17.59	01	76	74			5	180			4.98
01	07	901113	17.59	76	74	01			5	180			5.86
01	08	901113	17.59	76	74	01			5	180			5.86
01	09	901113	17.59	74	01	76			5	180			3.81
02	01	901113	16.48	74	01	76			5	180	06 35 n	113 12 w	1.65
02	02	901113	16.48	07	22	73			5	180			4.12
02	03	901113	16.48	07	22	73			5	180			4.67
03	01	901113	15.93	74	01	76	02	02	5	181	05 42 n	113 13 w	8.76
03	02	901113	15.93	01	76	74	02	03	5	181			6.64
03	03	901113	15.93	76	74	01			5	181			3.45
03	04	901113	15.93	76	74	01	02	03	5	181			4.78
03	05	901113	15.93	73	07	22	02	03	5	181			9.56
03	06	901113	15.93	73	07	22	02	03	5	181	05 24 n	113 13 w	0.27
01	01	901114	16.67	76	74	01			5	174	03 56 n	113 15 w	8.61
01	02	901114	16.67	74	01	76			5	174			5.83
01	03	901114	16.67	74	01	76	10	03	5	174			0.83
02	01	901114	17.96	22	73	07			5	180	03 00 n	113 18 w	11.38
02	02	901114	17.96	73	07	22	12	01	5	180			7.49
02	03	901114	17.96	73	07	22	01	01	5	180			3.59
02	04	901114	17.96	07	22	73	01	01	5	180			0.90
03	01	901114	18.15	07	22	73	01	01	5	180	02 49 n	113 19 w	5.75
03	02	901114	18.15	74	01	76	01	01	5	180	02 46 n	113 20 w	9.68
03	03	901114	18.15	74	22	76	01	01	5	180			2.42
03	04	901114	18.15	01	76	74	01	02	5	180			12.10
03	05	901114	18.15	76	74	01	01	02	5	180			12.10
03	06	901114	18.15	73	07	22	02	02	5	180	02 24 n	113 24 w	9.07
03	07	901114	18.15	07	22	73			5	180			9.07
03	08	901114	18.15	22	73	07			5	180	02 16 n	113 24 w	9.07

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
03	09	901114	18.15	01	76	74			5	180			4.84
03	10	901114	18.15	01	76	74			5	180			2.72
03	11	901114	18.15	76	74	01	02	03	5	180			3.33
03	12	901114	18.15	76	74	01	02	03	5	180	02 06 n	113 25 w	0.30
01	01	901115	17.04	73	07	22			5	185	00 38 n	113 44 w	6.82
01	02	901115	17.04	73	07	22			5	185			3.12
01	03	901115	17.04	07	22	73			5	185			1.99
01	04	901115	17.04	07	22	73			5	185			4.26
01	05	901115	17.04	07	22	73			5	185			1.99
02	01	901115	18.71	22	73	07			5	235	00 24 n	113 50 w	3.12
02	02	901115	18.71	01	76	74			5	250			7.79
02	03	901115	18.71	01	76	74			5	270			4.68
02	04	901115	18.71	76	74	01			5	270			3.74
02	05	901115	18.71	76	74	01			5	270			0.94
03	01	901115	18.71	74	01	76			5	270	00 22 n	114 05 w	9.35
03	02	901115	18.71	74	01	76			5	270			1.87
03	03	901115	18.71	07	22	73			5	270			5.30
04	01	901115	18.89	22	73	07			4	270	00 22 n	114 22 w	8.82
04	02	901115	18.89	73	07	22			4	270			12.28
04	03	901115	18.89	76	74	01			4	270	00 22 n	114 33 w	12.59
04	04	901115	18.89	74	01	76	10	01	4	270			5.98
04	05	901115	18.89	74	01	76			4	270			2.20
05	01	901115	19.45	01	76	74			4	270	00 22 n	114 48 w	11.02
05	02	901115	19.45	22	73	07	11	01	4	270			13.29
05	03	901115	19.45	73	07	22	11	01	4	270			12.64
05	04	901115	19.45	07	22	73	11	02	4	270	00 21 n	114 11 w	12.96
05	05	901115	19.45	74	01	76			4	270			0.97
06	01	901115	19.45	74	01	76	11	02	4	270	00 22 n	115 18 w	6.81
06	02	901115	19.45	74	01	76	11	02	4	285			2.92
06	03	901115	19.45	01	76	74	11	02	4	285			7.13
06	04	901115	19.45	76	74	01	11	03	4	285			6.48
06	05	901115	19.45	73	07	22	11	03	4	285			9.72
06	06	901115	19.45	07	22	73	11	03	4	285			1.30
06	07	901115	19.45	07	22	73			4	285			6.81
06	08	901115	19.45	07	22	73			4	285	00 26 n	115 40 w	0.32
01	01	901116	16.85	74	01	76			4	000	00 33 n	117 07 w	3.93
02	01	901116	16.30	01	76	74	03	03	4	000	00 37 n	117 05 w	4.89
02	02	901116	16.30	01	76	74	03	03	4	000			4.35
03	01	901116	17.22	76	74	01	04	02	5	000	00 44 n	117 06 w	5.74
03	02	901116	17.22	73	07	22	04	02	5	000	00 47 n	117 06 w	11.48
03	03	901116	17.22	07	22	73	04	02	5	000	00 51 n	117 06 w	11.48
03	04	901116	17.22	22	73	07	04	02	5	000			11.48
03	05	901116	17.22	01	76	74	04	02	4	000	01 07 n	117 06 w	12.92
03	06	901116	17.22	76	74	01			4	000			7.18
04	01	901116	18.52	74	01	76	04	01	4	000	01 21 n	117 07 w	10.80
04	02	901116	18.52	07	22	73			5	000	01 27 n	117 07 w	4.32
04	03	901116	18.52	07	22	73	05	01	5	000			4.94
04	04	901116	18.52	07	22	73	06	01	5	000			3.09
04	05	901116	18.52	22	73	07	06	01	5	000			10.19
05	01	901116	17.59	76	74	01	08	01	5	006	01 37 n	116 59 w	6.16
06	01	901116	18.33	74	01	76	08	01	5	006	01 45 n	117 01 w	7.33
06	02	901116	18.33	01	76	74	08	01	5	006			6.11
06	03	901116	18.33	22	73	07	08	02	5	006	01 53 n	117 01 w	12.22
06	04	901116	18.33	73	07	22	08	02	5	006			7.95

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
06	05	901116	18.33	07	22	73	08	02	5	006			7.33
06	06	901116	18.33	74	01	76	08	03	4	006			10.08
06	07	901116	18.33	01	76	74	08	03	4	006			8.25
06	08	901116	18.33	01	76	74	08	03	4	006	02 18 n	117 01 w	0.31
01	01	901117	17.96	22	73	07			5	009	03 58 n	116 54 w	2.99
02	01	901117	19.26	73	07	22			5	009	04 03 n	116 53 w	8.99
02	02	901117	19.26	07	22	73			5	009			8.67
02	03	901117	19.26	74	01	76			5	009			1.61
03	01	901117	18.15	01	76	74			5	009	04 18 n	116 49 w	10.59
03	02	901117	18.15	76	74	01			5	009			12.10
03	03	901117	18.15	73	07	22			5	009			12.70
03	04	901117	18.15	07	22	73			5	009			3.33
03	05	901117	18.33	07	22	73	04	02	5	005			3.67
03	06	901117	18.33	07	22	73			5	005	04 40 n	116 45 w	4.58
03	07	901117	18.33	22	73	07			5	005			12.22
03	08	901117	18.33	01	76	74	12	12	5	005	04 51 n	116 44 w	12.22
03	09	901117	18.33	76	74	01	06	01	5	005			12.22
04	01	901117	18.15	07	22	73			5	005	05 04 n	116 37 w	4.84
04	02	901117	18.15	07	22	73	08	02	5	005			5.14
04	03	901117	18.15	22	73	07			5	005			10.59
04	04	901117	18.15	73	07	22			5	005			9.68
04	05	901117	18.15	76	74	01			5	005			9.07
04	06	901117	18.15	74	01	76			4	005			9.07
04	07	901117	18.15	01	76	74			4	005	05 31 n	116 36 w	9.07
04	08	901117	18.15	22	73	07			4	005			11.49
04	09	901117	18.15	22	73	07			4	005	05 42 n	116 33 w	0.30
01	01	901118	18.52	76	74	01			2	003	07 26 n	116 25 w	12.35
01	02	901118	18.52	74	01	76			3	003			10.19
01	03	901118	18.52	74	01	76			3	003			2.16
01	04	901118	18.52	07	22	73			3	003	07 40 n	116 25 w	4.32
01	05	901118	18.52	07	22	73			3	003			7.72
02	01	901118	18.33	22	73	07			3	003	07 50 n	116 24 w	4.89
02	02	901118	18.33	73	07	22			3	003			4.58
02	03	901118	18.33	73	07	22	04	02	3	003			7.33
02	04	901118	18.33	76	74	01			3	003	07 59 n	116 23 w	5.19
02	05	901118	18.33	76	74	01	04	01	3	003			7.03
02	06	901118	18.33	74	01	76	04	01	3	003			12.83
02	07	901118	18.33	01	76	74	12	12	3	003			7.03
03	01	901118	18.15	22	73	07	12	12	3	003	08 19 n	116 20 w	9.07
03	02	901118	18.15	22	73	07	12	12	3	003			1.81
03	03	901118	18.15	73	07	22	12	12	3	003			11.49
04	01	901118	17.78	73	07	22	08	01	3	003	08 34 n	116 22 w	2.37
04	02	901118	17.78	74	01	76	07	01	3	003			11.85
04	03	901118	17.78	01	76	74	08	01	3	003			2.07
05	01	901118	17.59	76	74	01	08	02	3	003	08 49 n	116 22 w	3.52
06	01	901118	19.26	73	07	22	08	02	3	003	08 53 n	116 21 w	3.85
06	02	901118	19.26	73	07	22	08	03	3	003			8.03
06	03	901118	19.26	76	74	01	08	03	3	003			2.25
06	04	901118	19.26	76	74	01	08	03	3	010			5.78
06	05	901118	19.26	74	01	76	08	03	3	010			2.57
06	06	901118	19.26	74	01	76	08	03	3	010	07 26 n	116 25 w	0.32
01	01	901119	20.93	07	22	73			3	070	09 54 n	114 50 w	3.49
01	02	901119	20.93	07	22	73	01	03	3	070			3.14
01	03	901119	20.93	07	22	73	02	01	2	070			1.40

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
02	01	901119	19.26	22	73	07	02	01	2	070	09 55 n	114 43 w	1.61
03	01	901119	17.96	01	76	74	02	02	2	070	09 59 n	114 41 w	0.90
04	01	901119	18.33	01	76	74	02	02	2	070	10 01 n	114 41 w	6.11
04	02	901119	18.33	76	74	01	02	02	2	070			7.03
05	01	901119	18.52	74	01	76	02	01	2	070	10 08 n	114 33 w	2.16
06	01	901119	18.52	07	22	73	02	01	1	070	10 08 n	114 30 w	9.26
06	02	901119	18.52	22	73	07	02	01	1	070			12.66
06	03	901119	18.52	73	07	22	03	01	1	070			3.70
07	01	901119	17.22	73	07	22	03	01	1	070	10 14 n	114 16 w	6.03
08	01	901119	17.22	76	74	01	03	01	1	070	10 15 n	114 12 w	9.76
09	01	901119	17.04	74	01	76	04	01	1	070	10 17 n	114 04 w	3.12
09	02	901119	17.04	74	01	76	04	01	1	070			1.14
09	03	901119	17.04	74	01	76	06	01	1	030			3.41
09	04	901119	17.04	01	76	74	06	01	2	030			5.11
09	05	901119	17.04	22	73	07	06	01	2	030			5.68
09	06	901119	17.04	22	73	07	06	01	2	030	10 24 n	113 58 w	0.28
01	01	901120	17.59	74	01	76	01	03	5	075	10 56 n	111 55 w	5.28
01	02	901120	17.59	74	01	76	01	03	5	075			1.47
01	03	901120	17.59	74	01	76			4	075	10 56 n	111 52 w	1.76
01	04	901120	17.59	01	76	74	01	03	4	075			8.50
01	05	901120	17.59	76	74	01	01	02	4	075			7.33
01	06	901120	17.59	73	07	22	02	02	4	075	10 58 n	111 43 w	2.35
01	07	901120	17.59	73	07	22	02	02	4	070			7.92
01	08	901120	17.59	73	07	22			4	070			1.47
01	09	901120	17.59	07	22	73			4	070			2.05
02	01	901120	18.15	07	22	73			4	070	11 03 n	111 31 w	1.51
02	02	901120	18.15	07	22	73	02	02	4	070			3.33
02	03	901120	18.15	22	73	07	02	02	4	070			3.02
02	04	901120	18.15	22	73	07			4	070			3.02
02	05	901120	18.15	22	73	07	02	02	4	070			6.05
02	06	901120	18.15	01	76	74	02	01	5	070	11 07 n	111 22 w	12.10
02	07	901120	18.15	76	74	01	03	01	5	070			5.75
03	01	901120	18.15	76	74	01	03	01	4	075	11 15 n	111 17 w	1.21
04	01	901120	18.15	07	22	73	03	01	4	075	11 15 n	111 16 w	9.38
05	01	901120	18.71	22	73	07	04	01	4	075	11 17 n	111 08 w	2.18
05	02	901120	18.71	22	73	07	04	01	4	075			2.81
05	03	901120	18.71	22	73	07			4	075			3.12
05	04	901120	18.71	73	07	22	05	01	4	075			6.55
05	05	901120	18.71	73	07	22	05	01	4	075			5.30
05	06	901120	18.71	76	74	01	05	01	4	075	11 20 n	110 58 w	12.47
05	07	901120	18.71	74	01	76	05	02	4	075			2.18
06	01	901120	18.15	74	01	76	05	02	4	075	11 24 n	110 54 w	4.23
06	02	901120	18.15	01	76	74	05	02	4	075			11.49
06	03	901120	18.15	22	73	07	05	02	3	075	11 26 n	110 44 w	6.65
06	04	901120	18.15	22	73	07			4	075			2.72
06	05	901120	18.15	73	07	22			4	075			0.60
07	01	901120	18.52	07	22	73			4	288	11 31 n	110 40 w	2.47
07	02	901120	18.52	74	01	76			4	288			3.40
01	01	901121	18.89	73	07	22	06	03	5	290	12 06 n	112 28 w	2.83
01	02	901121	18.89	73	07	22			5	290			5.35
01	03	901121	18.89	07	22	73			5	290			7.24
01	04	901121	19.26	07	22	73			5	290			1.61
01	05	901121	19.26	22	73	07			4	290			7.70
01	06	901121	19.26	22	73	07	06	02	4	290			1.92

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
01	07	901121	19.26	01	76	74			4	290	12 11 n	112 44 w	12.84
01	08	901121	19.26	76	74	01			4	290			6.42
01	09	901121	19.26	76	74	01	07	02	4	290			6.42
01	10	901121	19.26	74	01	76	07	02	4	290			7.06
01	11	901121	19.26	74	01	76			4	290			5.78
01	12	901121	19.26	07	22	73			4	290	12 19 n	112 02 w	3.21
01	13	901121	19.26	07	22	73	07	02	4	290			1.93
01	14	901121	19.26	07	22	73	07	02	4	290			4.17
01	15	901121	19.26	07	22	73	07	01	4	290			4.17
01	16	901121	19.26	22	73	07	07	01	4	290			12.52
01	17	901121	19.26	73	07	22	07	01	4	290			0.96
02	01	901121	19.45	76	74	01			3	302	12 26 n	113 23 w	4.86
02	02	901121	19.45	76	74	01			3	325			6.48
02	03	901121	19.45	74	01	76			3	280			5.51
02	04	901121	19.45	74	01	76			3	280			2.92
02	05	901121	19.45	74	01	76	09	01	3	280			10.37
02	06	901121	19.45	01	76	74	10	01	3	280			6.48
02	07	901121	19.45	22	73	07	10	01	3	280	12 34 n	113 42 w	13.29
02	08	901121	19.45	73	07	22	10	02	3	280			4.21
03	01	901121	19.63	74	01	76	11	02	3	280	12 34 n	114 03 w	13.41
03	02	901121	19.82	01	76	74	11	02	3	280			4.29
04	01	901121	19.82	76	74	01	11	03	3	290	12 38 n	114 16 w	3.96
04	02	901121	19.82	73	07	22	11	03	3	290			1.98
05	01	901121	19.82	73	07	22	11	03	3	290	12 38 n	114 20 w	7.27
05	02	901121	19.82	73	07	22	11	03	3	290	12 41 n	114 23 w	0.33
01	01	901122	17.78	76	74	01	01	03	2	075	13 21 n	115 31 w	10.37
01	02	901122	17.78	74	01	76	01	03	3	075			10.37
01	03	901122	17.78	22	73	07	01	02	3	075	13 24 n	115 20 w	10.67
02	01	901122	17.59	73	22	99	02	02	3	075	13 29 n	115 12 w	2.05
02	02	901122	17.59	73	07	22	02	02	3	075			6.45
02	03	901122	17.59	07	22	73	02	02	3	075			8.21
02	04	901122	17.59	74	01	76	02	02	3	075	13 32 n	115 01 w	9.68
02	05	901122	17.59	74	01	76			3	075			2.05
02	06	901122	17.59	01	76	74	03	01	3	075			5.86
03	01	901122	17.22	01	76	74	03	01	3	075	13 36 n	114 58 w	3.73
03	02	901122	17.22	73	07	22	03	01	4	075			8.32
03	03	901122	17.22	73	07	22	03	01	4	080			2.30
03	04	901122	17.22	07	22	73	04	01	4	080			11.48
03	05	901122	17.22	22	73	07	04	01	4	080			11.48
03	06	901122	17.22	01	76	74	04	01	4	080			6.32
03	07	901122	17.22	01	76	74	04	01	4	080			3.44
04	01	901122	16.67	76	74	01			3	080	13 43 n	114 30 w	5.83
04	02	901122	16.67	76	74	01	05	02	4	080			2.22
04	03	901122	16.67	74	01	76	05	02	4	080	13 45 n	114 20 w	11.11
04	04	901122	16.67	07	22	73	05	02	4	080			4.44
05	01	901122	17.41	07	22	73	05	02	4	080	13 44 n	114 16 w	1.45
01	01	901123	17.41	22	73	07			4	080	14 05 n	112 23 w	7.54
01	02	901123	17.41	73	07	22	01	03	4	080			8.12
01	03	901123	17.41	07	22	73	01	03	4	080			7.54
01	04	901123	17.41	74	01	76	01	02	4	080	14 07 n	112 10 w	4.35
01	05	901123	17.59	74	01	76	02	02	4	075			7.33
01	06	901123	17.59	01	76	74	02	02	4	075			5.57
02	01	901123	17.59	01	76	74	02	02	4	075	14 10 n	111 58 w	2.64
02	02	901123	17.59	01	74	76	02	02	4	075			0.59

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
03	01	901123	18.89	76	74	01	02	02	4	075	14 12 n	111 56 w	1.57
03	02	901123	18.89	73	07	22	02	02	4	075			6.30
03	03	901123	18.89	73	07	22	02	01	4	075			6.30
03	04	901123	18.89	07	22	73	02	01	4	075			8.19
03	05	901123	18.89	07	22	73	03	01	4	075			4.41
03	06	901123	18.89	22	73	07	03	01	4	075			4.09
03	07	901123	18.89	22	73	07	08	01	4	290	14 19 n	111 44 w	8.50
03	08	901123	18.89	01	76	74	12	12	3	290			12.59
03	09	901123	18.89	76	74	01	09	01	3	290			12.59
03	10	901123	18.89	74	01	76	09	01	4	290			9.45
03	11	901123	18.89	74	01	76	09	01	4	300			0.94
04	01	901123	18.52	07	22	73	10	02	4	290	14 29 n	112 05 w	8.03
04	02	901123	18.52	22	73	07	10	02	4	290	14 31 n	112 09 w	4.94
04	03	901123	18.52	22	07	73	10	02	4	290			2.47
04	04	901123	18.52	73	07	22	10	02	4	290			6.48
04	05	901123	18.52	76	74	01	10	02	3	290			9.26
04	06	901123	18.52	74	01	76	10	03	3	290			9.26
04	07	901123	18.52	01	76	74	11	03	3	290			9.26
04	08	901123	18.52	22	73	07	11	03	3	290			0.93
05	01	901123	18.15	22	73	07	11	03	3	290			1.51
05	02	901123	18.15	22	73	07			3	290	14 42 n	112 32 w	0.30
01	01	901124	18.52	74	01	76			3	285	15 03 n	114 14 w	7.72
01	02	901124	18.52	01	76	74			3	285			5.86
02	01	901124	18.15	76	74	01	06	03	3	295	15 01 n	114 13 w	6.35
02	02	901124	18.15	73	07	22	06	02	4	295			12.10
02	03	901124	18.15	07	22	73			4	295			2.12
02	04	901124	18.15	07	22	73	06	02	4	295			9.98
02	05	901124	18.15	22	73	07	06	02	3	295			12.10
02	06	901124	18.15	01	76	74	06	01	3	295	15 15 n	114 47 w	12.10
02	07	901124	18.15	76	74	01			3	295			11.49
02	08	901124	18.15	76	74	01	07	01	3	290			1.21
02	09	901124	18.15	74	01	76	08	01	3	290			11.49
02	10	901124	18.15	07	22	73	08	01	4	290	15 22 n	115 04 w	12.10
02	11	901124	18.15	22	73	07	08	01	4	290			12.70
02	12	901124	18.15	73	07	22	09	01	4	290			11.49
02	13	901124	18.15	76	74	01	09	01	3	290	15 30 n	115 25 w	12.10
02	14	901124	18.15	74	01	76	10	02	3	290			12.10
02	15	901124	18.15	01	76	74			3	290			12.10
02	16	901124	18.15	22	73	07			3	290	15 40 n	115 45 w	9.38
02	17	901124	18.15	73	07	22			3	290			8.17
03	01	901124	18.71	73	07	22			3	290	15 42 n	115 55 w	2.49
03	02	901124	18.71	76	74	01			3	290			9.04
03	03	901124	18.71	76	74	01			3	290	15 46 n	116 00 w	0.31
01	01	901125	18.52	07	22	73			5	080	16 17 n	115 13 w	5.56
01	02	901125	18.52	07	22	73			5	080			2.47
02	01	901125	17.41	07	22	73	01	03	5	080	16 18 n	115 08 w	2.90
02	02	901125	17.41	22	73	07	01	03	5	080			5.80
02	03	901125	17.41	22	73	07	01	03	5	075			5.22
03	01	901125	17.78	73	07	22	02	02	5	070	16 18 n	114 57 w	6.52
03	02	901125	17.78	76	74	01	02	02	5	070			11.85
03	03	901125	17.78	74	01	76	02	02	5	070			11.85
03	04	901125	17.78	01	76	74	02	02	5	070			2.07
04	01	901125	17.78	01	76	74	02	02	5	070	16 24 n	114 39 w	8.00
04	02	901125	17.78	22	73	07	03	01	5	075			8.00

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
04	03	901125	17.78	22	73	07			5	075			4.15
04	04	901125	17.78	73	07	22			5	075			11.56
04	05	901125	17.78	07	22	73			4	075			4.15
05	01	901125	17.41	07	22	73	04	01	4	075	16 24 n	114 18 w	1.16
05	02	901125	17.41	74	01	76	04	01	4	075			11.61
05	03	901125	17.41	01	76	74	04	01	4	075			9.28
06	01	901125	16.30	01	76	74	05	01	4	075	16 27 n	114 05 w	1.09
06	02	901125	16.30	76	74	01	05	01	4	075			10.87
06	03	901125	16.30	73	07	22	05	02	4	075			10.87
06	04	901125	16.30	07	22	73	05	02	4	075			2.17
06	05	901125	16.30	07	22	73	07	02	4	045			0.81
07	01	901125	17.78	07	22	73	05	02	3	075	16 31 n	113 49 w	4.15
07	02	901125	17.78	22	73	07	05	02	3	075			11.85
07	03	901125	17.78	01	76	74			3	075			8.89
07	04	901125	17.78	76	74	01			3	075			8.00
07	05	901125	17.78	76	74	01			3	075	16 35 n	113 29 w	0.30
01	01	901126	18.15	01	76	74	01	03	3	082	16 59 n	111 44 w	14.52
01	02	901126	18.15	76	74	01	01	03	3	082			13.61
02	01	901126	17.41	74	01	76	01	02	2	082	17 01 n	111 26 w	4.64
02	02	901126	17.41	07	22	73	02	02	2	082			11.61
02	03	901126	17.41	22	73	07	02	02	2	082			2.61
03	01	901126	17.22	22	73	07	02	02	2	096	17 04 n	111 14 w	1.72
03	02	901126	17.22	22	73	07	02	02	2	082			5.74
03	03	901126	17.22	73	07	22	02	01	2	082			3.73
04	01	901126	17.22	73	07	22	02	01	1	082	17 06 n	111 06 w	1.44
04	02	901126	17.22	73	07	22	02	01	1	085			1.44
04	03	901126	17.22	76	74	01	02	01	1	085	17 06 n	111 04 w	3.16
05	01	901126	17.41	76	74	01	02	01	1	085	17 06 n	111 01 w	4.64
06	01	901126	20.19	73	07	22	04	01	1	085	17 09 n	110 57 w	10.43
06	02	901126	20.19	07	22	73	04	01	1	085			4.37
07	01	901126	20.00	22	73	07	04	01	1	085	17 14 n	110 45 w	6.33
08	01	901126	20.37	01	76	74	05	02	1	085	17 14 n	110 42 w	6.79
09	01	901126	18.15	76	74	01			1	090	17 12 n	110 34 w	6.65
10	01	901126	18.15	74	01	76	05	02	1	090	17 07 n	110 30 w	9.98
11	01	901126	19.26	07	22	73	05	03	1	090			7.38
11	02	901126	19.26	07	22	73	05	03	1	090	17 12 n	110 16 w	0.32
01	01	901127	11.67	73	07	22			1	283	17 32 n	111 44 w	1.56
02	01	901127	18.52	73	07	22	06	03	2	283	17 31 n	111 46 w	3.40
03	01	901127	20.19	07	22	73	06	02	2	283	17 30 n	111 56 w	3.03
04	01	901127	13.15	07	22	73	06	02	3	283	17 28 n	112 00 w	0.88
04	02	901127	17.41	07	22	73	06	02	3	290			2.03
04	03	901127	17.41	22	73	07	06	02	3	290			11.61
04	04	901127	17.41	01	76	74	07	02	2	290			11.61
04	05	901127	17.41	76	74	01	07	02	2	290			11.61
04	06	901127	17.41	74	01	76	07	01	2	290			11.61
04	07	901127	17.41	07	22	73	07	01	2	290	17 41 n	112 27 w	5.80
04	08	901127	17.41	07	22	73	08	01	2	290			5.80
04	09	901127	17.41	22	73	07	08	01	2	290			11.90
04	10	901127	17.41	73	07	22	08	01	2	290			0.87
04	11	901127	17.41	73	07	22	08	01	2	285			10.45
04	12	901127	17.41	76	74	01	09	01	2	285	17 49 n	112 46 w	8.12
05	01	901127	18.52	74	01	76	10	01	2	285	17 50 n	112 52 w	5.86
05	02	901127	18.52	74	01	76			3	285			1.23
06	01	901127	17.59	01	76	74			4	285	17 52 n	112 57 w	7.92

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
06	02	901127	17.59	22	73	07			5	285			8.80
06	03	901127	17.59	22	73	07			5	280			2.35
06	04	901127	17.59	73	07	22	11	02	4	280			11.44
06	05	901127	17.59	07	22	73			4	280			3.23
06	06	901127	17.59	07	22	73			5	280			4.69
06	07	901127	17.59	07	22	73	11	03	4	280			3.81
06	08	901127	15.93	74	01	76	11	03	4	280	17 58 n	113 21 w	6.90
06	09	901127	15.93	74	01	76			4	280			1.59
06	10	901127	15.93	01	76	74			4	280			4.25
06	11	901127	15.93	01	76	74			4	280	17 59 n	113 29 w	0.27
01	01	901129	16.67	22	73	07			4	070	18 56 n	112 16 w	5.00
01	02	901129	16.67	22	73	07	02	03	4	070			1.67
01	03	901129	16.67	73	07	22	02	03	4	070			6.95
01	04	901129	16.67	07	22	73	02	03	4	070			3.61
02	01	901129	16.67	74	01	76	02	02	4	075	19 01 n	112 02 w	9.72
02	02	901129	16.67	01	76	74	02	02	4	075			7.50
02	03	901129	16.67	22	73	07	03	01	4	075	19 04 n	111 42 w	11.39
02	04	901129	16.67	73	07	22	03	01	4	075			10.83
02	05	901129	16.67	07	22	73	03	01	4	075			5.56
02	06	901129	16.67	07	22	73	04	01	4	075			5.56
02	07	901129	16.67	74	01	76	04	01	4	075	19 06 n	111 34 w	5.56
02	08	901129	16.30	74	01	76	07	01	4	002			5.98
02	09	901129	16.30	01	76	74	07	01	4	002			10.32
02	10	901129	16.30	76	74	01	07	02	4	002			10.87
02	11	901129	16.30	73	07	22	07	02	4	002	19 22 n	111 30 w	10.87
02	12	901129	16.30	07	22	73	08	02	4	002			10.87
02	13	901129	16.30	22	73	07	08	02	4	002			2.17
02	14	901129	16.67	22	73	07	04	02	4	112			8.89
02	15	901129	16.67	01	76	74	04	03	4	112			6.94
02	16	901129	16.67	76	74	01	04	03	4	112			4.17
02	17	901129	16.67	76	74	01	04	03	4	112	19 29 n	111 18 w	0.28
01	01	901130	16.67	73	07	22	04	01	2	100	19 17 n	110 40 w	7.78
01	02	901130	16.67	07	22	73	04	01	2	100			5.00
01	03	901130	16.67	07	22	73	04	02	3	100			1.39
01	04	901130	16.67	22	73	07	04	02	3	100			6.95
02	01	901130	17.41	01	76	74	04	02	3	095	19 10 n	110 29 w	8.12
02	02	901130	17.41	76	74	01	04	02	3	095	19 09 n	110 25 w	8.70
02	03	901130	17.41	74	01	76	05	03	3	095			1.74
02	04	901130	17.41	74	01	76	05	03	3	090	19 09 n	110 17 w	6.96
02	05	901130	17.41	07	22	73	05	03	3	090			10.16
02	06	901130	17.41	07	22	73	05	03	3	090	19 08 n	110 06 w	0.29
01	01	901201	19.45	07	22	73			3	320	19 50 n	109 59 w	3.57
01	02	901201	19.45	07	22	73	05	03	3	320			6.48
01	03	901201	19.45	07	22	73	05	03	4	320			1.62
01	04	901201	19.45	22	73	07	05	03	4	320			11.67
01	05	901201	19.45	73	07	22	05	02	4	320			2.92
01	06	901201	19.45	73	07	22	05	02	4	325			8.43
01	07	901201	19.45	07	22	73	05	02	4	325			11.02
01	08	901201	19.45	74	01	76	05	02	4	325	20 08 n	110 14 w	12.96
01	09	901201	19.45	01	76	74	05	02	4	325			12.96
01	10	901201	19.45	76	74	01	06	01	4	325			12.96
01	11	901201	19.45	73	07	22	06	01	4	325	20 24 n	110 26 w	7.78
01	12	901201	19.45	73	07	22	07	01	4	325			5.19
01	13	901201	19.45	07	22	73	07	01	4	325			1.30

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
01	14	901201	18.33	07	22	73	07	01	4	320			1.83
01	15	901201	18.33	07	22	73	07	01	5	320			9.17
01	16	901201	18.33	22	73	07	07	01	5	320			12.22
01	17	901201	18.33	01	76	74	08	01	5	320	20 41 n	110 39 w	12.22
01	18	901201	18.33	76	74	01	08	02	4	320			14.06
02	01	901201	16.30	07	22	73	09	02	4	330	20 47 n	110 48 w	5.98
02	02	901201	16.30	99	22	73	09	02	4	330			1.36
02	03	901201	16.30	07	22	73	09	02	4	330			3.53
02	04	901201	16.30	22	73	07	09	02	4	330			11.68
02	05	901201	16.30	73	07	22	09	02	4	330			7.06
02	06	901201	16.30	73	07	22	09	03	4	320			2.99
02	07	901201	16.30	76	74	01	09	03	4	320			2.72
03	01	901201	16.30	76	74	01	09	03	4	320	21 05 n	111 00 w	2.99
03	02	901201	16.30	76	74	01	09	03	4	320	21 06 n	111 01 w	0.27
01	01	901202	16.85	76	74	01	05	03	5	315	22 28 n	112 09 w	11.80
01	02	901202	16.85	74	01	76	05	03	5	315			10.95
01	03	901202	16.85	74	01	76	05	02	5	320			2.53
01	04	901202	16.85	01	76	74	05	02	5	320			10.11
01	05	901202	16.85	22	73	07	06	02	5	320	22 42 n	112 23 w	11.80
01	06	901202	16.85	73	07	22	06	02	5	320			3.09
01	07	901202	16.85	73	07	22	06	02	5	320			5.34
02	01	901202	16.85	07	22	73	06	02	5	320	22 52 n	112 31 w	3.93
03	01	901202	17.59	74	01	76	06	01	5	320	22 56 n	112 33 w	11.73
03	02	901202	17.59	01	76	74	07	01	5	320			11.73
03	03	901202	17.59	76	74	01	07	01	5	320			11.73
03	04	901202	17.59	73	07	22	08	01	5	320	23 11 n	112 48 w	11.73
03	05	901202	17.59	07	22	73	08	02	4	320			6.74
04	01	901202	16.85	01	76	74	09	02	4	320	23 19 n	113 01 w	11.24
04	02	901202	16.85	76	74	01	09	02	5	320			8.43
04	03	901202	16.85	76	74	01	09	02	5	320			2.81
04	04	901202	16.85	74	01	76	09	02	5	334			8.15
05	01	901202	16.85	07	22	73	09	03	5	334	23 39 n	113 14 w	7.58
05	02	901202	16.85	07	22	73	09	03	5	334	23 43 n	113 16 w	0.28
01	01	901203	17.41	73	07	22	02	03	4	050	25 15 n	111 34 w	7.54
01	02	901203	17.41	73	07	22	02	03	4	070			0.87
01	03	901203	17.41	73	07	22	02	03	4	060			1.45
01	04	901203	17.41	73	07	22	02	03	4	050			0.87
01	05	901203	17.41	07	22	73	02	03	5	050			11.03
01	06	901203	17.41	22	73	07	02	02	5	050			0.58
02	01	901203	17.04	22	73	07	03	02	5	050	25 25 n	114 20 w	4.26
02	02	901203	17.04	01	76	74	03	02	5	050			11.36
02	03	901203	17.04	76	74	01	03	02	5	050			5.68
02	04	901203	17.04	76	74	01	06	02	5	320			5.68
02	05	901203	17.04	74	01	76	06	02	5	320			3.41
03	01	901203	17.41	74	01	76	06	02	5	320	25 35 n	114 12 w	6.09
03	02	901203	17.41	07	22	73	06	02	4	320			4.35
03	03	901203	17.41	07	22	73	07	02	4	320			7.25
03	04	901203	17.41	22	73	07	07	01	4	320			11.61
03	05	901203	17.41	73	07	22	07	01	4	320			2.32
03	06	901203	17.41	73	07	22	04	01	4	050			9.28
03	07	901203	17.41	76	74	01	05	01	4	050	25 53 n	114 18 w	4.93
04	01	901203	17.41	74	01	76	05	01	4	050	25 55 n	114 16 w	10.45
04	02	901203	17.41	01	76	74	05	02	4	050			10.74
04	03	901203	17.41	01	76	74	05	02	4	068			0.87

Table 2. (continued)

series	leg	date	speed km/hr	observer codes left	right	rec.	sun position horz.	vert.	beauf. no.	course (deg.)	position latitude	longitude	km in leg
04	04	901203	17.41	22	73	07	05	02	4	068			4.06
05	01	901203	17.59	22	73	07	05	02	4	068	26 04 n	114 01 w	1.17
05	02	901203	17.59	22	73	07	05	02	4	060			3.81
05	03	901203	17.59	73	07	22	06	02	4	050			2.05
05	04	901203	17.59	73	07	22	06	02	3	050			5.28
06	01	901203	17.78	07	22	73	06	02	3	050	26 09 n	113 55 w	2.37
07	01	901203	17.78	74	01	76	06	03	3	050	26 15 n	113 50 w	1.78
07	02	901203	17.78	74	01	76	06	03	3	050	26 14 n	113 50 w	0.30
01	01	901204	17.41	74	01	76	06	03	5	290	27 05 n	115 41 w	4.35
02	01	901204	17.59	01	76	74	06	03	5	290	27 08 n	115 43 w	9.09
02	02	901204	17.59	76	74	01	06	02	5	290			9.09
02	03	901204	17.59	73	07	22	07	02	5	290	27 11 n	115 54 w	11.44
02	04	901204	17.59	07	22	73	07	02	5	290			11.73
02	05	901204	17.59	22	73	07	07	02	4	290			11.73
02	06	901204	17.59	01	76	74	08	02	4	290	27 19 n	116 16 w	11.73
02	07	901204	17.59	76	74	01	08	02	4	290			11.73
02	08	901204	17.59	74	01	76	08	02	4	290			11.73
02	09	901204	17.59	07	22	73	09	02	4	290	27 27 n	116 37 w	11.73
02	10	901204	17.59	22	73	07	09	02	4	290			14.08
02	11	901204	17.59	73	07	22	09	02	4	290			1.17
02	12	901204	17.59	73	07	22	10	02	4	280			1.76
03	01	901204	18.15	73	07	22	09	02	4	290	27 32 n	116 54 w	0.91
03	02	901204	18.15	73	07	22	09	02	4	290			4.54
04	01	901204	17.22	76	74	01	08	02	4	000	27 33 n	117 02 w	7.75
04	02	901204	17.22	74	01	76	08	03	4	000			5.45
04	03	901204	17.22	22	73	07	08	03	4	000	27 41 n	117 03 w	7.18
04	04	901204	17.22	73	07	22	08	03	4	000			6.89
04	05	901204	17.22	73	07	22	08	03	4	000	27 48 n	117 04 w	0.86
01	01	901205	17.78	22	73	07			3	015	29 43 n	116 23 w	1.78
01	02	901205	17.78	22	73	07	03	03	3	015			8.59
01	03	901205	17.78	73	07	22	03	03	3	015			0.30
01	04	901205	17.78	73	07	22	03	03	3	010			1.19
01	05	901205	17.78	73	07	22	03	03	3	015			9.19
01	06	901205	17.78	07	22	73	03	03	3	015			2.67
01	07	901205	17.78	07	22	73	04	02	3	015			5.93
01	08	901205	17.78	74	01	76	04	02	3	015			3.56
02	01	901205	17.41	74	01	76	04	02	3	015	30 00 n	116 19 w	1.16
03	01	901205	18.15	74	01	76	04	02	3	015	30 04 n	116 18 w	2.72
03	02	901205	18.15	01	76	74	04	02	2	015			9.38
04	01	901205	17.59	73	07	22	05	02	2	015	30 17 n	116 15 w	3.52
05	01	901205	18.15	07	22	73	06	02	2	015	30 23 n	116 15 w	3.02
05	02	901205	18.15	07	22	73	06	02	1	015			3.63
05	03	901205	18.15	07	22	73	06	02	1	015			3.02
05	04	901205	18.15	22	73	07	07	02	1	330			1.51
05	05	901205	14.82	22	73	07	07	02	1	330			4.20
06	01	901205	19.08	76	74	01	08	02	1	330	30 37 n	116 16 w	4.77
07	01	901205	17.04	76	74	01	08	02	1	330	30 40 n	116 18 w	4.54
07	02	901205	17.04	74	01	76	08	02	1	330			3.41
07	03	901205	17.04	74	01	76	09	02	2	330			1.14
07	04	901205	17.04	74	01	76	09	02	2	320			3.12
07	05	901205	17.04	74	01	76	09	02	2	320	30 46 n	116 22 w	0.28

Table 3. Marine mammal sightings, classified by species code groups, encountered in the eastern tropical Pacific during July 28 through December 6, 1990.

Sightings by Species

species: OFFSHORE SPOTTED DOLPHIN (STENELLA ATTENUATA) species code: 2

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900805	02	02	04	12	12	3	67	3.0	18 56 n	119 27 w	100.0	268.0	250.0
900806	01	16	03	01	12	5	69	2.5	17 03 n	122 53 w	55.0	102.0	88.0
900807	02	05	02	08	02	5	56	1.4	15 39 n	125 00 w	6.7	117.0	90.0
900810	02	04	02	10	02	2	55	5.1	06 17 n	122 43 w	100.0	93.0	81.0
900811	01	01	01			4	55	0.2	04 10 n	121 02 w	33.0	32.0	23.0
900819	01	16	02			5	55	3.2	09 56 n	108 58 w	100.0	44.0	35.0
900822	01	01	01	11	03	2	69	2.6	13 22 n	103 46 w	70.0	210.0	170.0
900822	02	06	04	11	01	4	55	3.6	13 16 n	103 19 w	70.0	295.0	212.0
900822	03	01	05	12	12	4	69	4.3	13 07 n	105 10 w	100.0	292.0	210.0
900823	01	05	02	11	02	2	71	0.4	12 24 n	100 31 w	63.3	107.0	83.0
900824	02	01	03			3	56	0.5	12 03 n	097 41 w	100.0	37.0	30.0
900824	09	01	09	07	02	4	71	1.4	12 06 n	096 20 w	41.0	100.0	85.0
900825	01	01	01			4	55	4.4	12 31 n	093 40 w	18.3	433.0	367.0
900825	04	04	07	07	02	4	56	2.9	13 05 n	092 54 w	41.7	650.0	667.0
900901	01	02	01	08	03	2	55	5.0	11 44 n	092 02 w	84.3	42.0	35.0
900901	11	01	17			2	56	1.3	10 17 n	092 53 w	100.0	25.0	20.0
900902	01	01	01	05	03	2	67	3.8	10 21 n	094 39 w	96.7	710.0	645.0
900902	04	01	05	06	01	3	55	5.1	10 21 n	095 14 w	96.0	202.0	174.0
900902	06	04	07	11	12	1	55	0.0	10 21 n	095 42 w	59.0	88.0	73.0
900902	07	01	09	11	01	1	69	0.5	10 20 n	095 52 w	100.0	242.0	210.0
900903	02	02	02			3	69	0.8	11 02 n	098 25 w	100.0	8.0	6.0
900903	04	06	03			3	67	1.7	11 11 n	099 00 w	50.7	217.0	203.0
900903	05	01	04	09	01	3	55	0.3	11 20 n	099 05 w	63.3	273.0	239.0
900903	06	02	05	11	02	3	56	7.4	11 28 n	099 11 w	54.8	315.0	292.0
900904	01	02	01			3	67	2.7	11 34 n	101 08 w	100.0	68.0	58.0
900904	02	01	02			3	77	3.2	11 21 n	101 19 w	32.7	97.0	74.0
900904	04	01	05	09	12	2	67	2.5	11 09 n	101 40 w	100.0	7.0	5.0
900904	04	02	06	09	12	2	55	3.8	11 07 n	101 41 w	100.0	93.0	67.0
900905	03	01	01			2	67	5.9	09 20 n	103 56 w	100.0	51.0	42.0
900908	05	03	01			4	56	2.7	05 03 n	112 15 w	80.0	193.0	178.0
900909	02	02	02			4	56	2.9	05 03 n	115 10 w	100.0	138.0	119.0
900910	05	01	04			5	55	0.0	04 31 n	116 31 w	100.0	42.0	27.0
900911	02	06	03	11	01	5	71	2.3	03 53 n	113 46 w	15.0	155.0	140.0
900911	04	05	05	05	01	4	55	1.2	03 44 n	113 13 w	100.0	168.0	122.0
900912	03	11	04	12	12	4	71	5.0	03 14 n	110 53 w	36.7	103.0	90.0
900917	02	02	03			4	67	5.5	00 29 n	104 12 w	100.0	147.0	117.0
900917	06	01	04	07	01	4	56	5.3	00 53 n	103 34 w	100.0	340.0	307.0
900922	01	03	01	06	01	4	56	6.2	01 25 n	091 34 w	80.7	838.0	743.0
900923	04	01	10	06	01	4	71	2.3	01 24 n	088 24 w	93.3	207.0	193.0
900927	05	01	05	12	02	4	67	5.2	07 27 n	082 18 w	100.0	2400.0	1833.0
900927	06	01	07			4	55	4.1	07 30 n	082 21 w	100.0	160.0	143.0

Table 3. (continued)

Sightings by Species

species: OFFSHORE SPOTTED DOLPHIN (STENELLA ATTENUATA) species code: 2

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
901018	05	04	04			5	07	1.0	09 15 n	094 20 w	100.0	12.0	8.0
901018	06	02	05	01	02	4	73	1.7	08 58 n	094 53 w	80.0	72.0	57.0
901019			01			6	74	1.1	08 13 n	096 17 w	100.0	32.0	22.0
901021			01			5	74	0.1	08 09 n	098 47 w	100.0	31.0	22.0
901021			04			5	01	2.2	08 31 n	098 29 w	100.0	35.0	20.0
901021	01	01	02			5	76	0.4	08 11 n	098 49 w	94.0	76.0	54.0
901022	01	04	01			5	73	3.5	10 04 n	096 37 w	100.0	19.0	13.0
901022	02	04	02			5	76	3.6	10 13 n	096 28 w	100.0	40.0	30.0
901022	03	07	05			5	74	1.1	10 22 n	096 13 w	100.0	20.0	7.0
901022	04	03	07			5	74	4.6	10 27 n	096 05 w	100.0	25.0	7.0
901024	01	01	01			2	07	0.2	13 37 n	091 18 w	100.0	7.0	5.0
901024	02	01	03	02	03	2	22	1.8	13 40 n	091 10 w	100.0	24.0	16.0
901028	03	01	03	11	01	2	76	5.7	13 48 n	091 27 w	100.0	87.0	61.0
901028	04	01	06	11	02	2	01	2.1	13 44 n	091 31 w	100.0	25.0	20.0
901028	04	03	07	11	02	2	01	5.4	13 44 n	091 39 w	99.0	23.0	18.0
901028	04	09	10			3	07	0.0	13 48 n	092 02 w	100.0	4.0	3.0
901030			06	09	01	2	04	0.8	15 48 n	098 55 w	100.0	16.0	13.0
901030	04	01	07	09	01	2	74	5.0	15 50 n	098 58 w	100.0	39.0	33.0
901030	05	01	08	09	01	2	07	0.7	15 46 n	099 03 w	80.2	173.0	141.0
901030	07	01	10	11	02	3	22	1.3	15 53 n	099 21 w	63.3	51.0	38.0
901031			16			2	04	0.0	16 25 n	102 41 w	100.0	22.0	19.0
901031	03	05	03	07	02	2	01	0.2	16 10 n	101 27 w	100.0	15.0	13.0
901031	04	01	04	07	02	2	76	1.0	16 12 n	101 32 w	100.0	8.0	6.0
901031	05	01	05	07	01	2	74	1.4	16 14 n	101 42 w	8.3	87.0	69.0
901031	11	01	11	11	02	2	22	2.6	16 24 n	102 26 w	100.0	15.0	13.0
901031	13	01	14	11	03	2	76	1.7	16 25 n	102 30 w	21.7	55.0	44.0
901108	02	09	02	01	01	4	73	4.1	17 16 n	105 42 w	16.0	200.0	130.0
901108	04	02	05	02	02	4	76	5.1	16 59 n	105 48 w	15.0	210.0	127.0
901108	05	01	06	02	03	4	22	1.2	16 52 n	105 51 w	64.3	123.0	65.0
901109	06	03	05	02	02	4	76	1.3	14 06 n	106 03 w	10.0	182.0	80.0
901110	01	04	01	09	03	5	76	1.7	12 16 n	106 31 w	17.3	343.0	303.0
901110	02	01	03	09	02	4	74	6.5	12 09 n	106 30 w	12.3	212.0	120.0
901110	03	02	05	09	02	4	22	6.0	11 59 n	106 26 w	100.0	31.0	18.0
901110	04	04	07	11	01	2	76	5.3	11 40 n	106 40 w	9.3	275.0	223.0
901111	02	03	02	07	02	1	74	4.3	10 22 n	108 57 w	24.3	66.0	45.0
901112	01	14	04	11	01	3	73	5.1	08 54 n	111 52 w	8.4	89.0	35.0
901116	05	01	05	08	01	5	76	2.6	01 40 n	116 59 w	100.0	28.0	21.0
901117	02	02	01			5	07	1.1	04 11 n	116 54 w	100.0	23.0	18.0
901119	04	02	05	02	02	2	76	3.2	10 04 n	114 34 w	67.8	128.0	93.0
901119	09	05	09	06	01	2	22	0.6	10 24 n	113 58 w	56.7	148.0	112.0
901120	02	07	01	03	01	5	76	3.4	11 10 n	111 13 w	26.7	98.0	82.0
901120	07	02	05			4	74	3.8	11 32 n	110 43 w	85.0	115.0	70.0
901121	02	08	02	10	02	3	73	1.4	12 35 n	113 50 w	0.0*	300.0	182.0
901122			04	03	01	3	99	4.6	13 34 n	114 52 w	12.6	48.0	30.0

Table 3. (continued)

Sightings by Species

species: OFFSHORE SPOTTED DOLPHIN (STENELLA ATTENUATA) species code: 2

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
901122	01	03	02	01	02	3	22	2.0	13 26 n	115 14 w	21.7	133.0	88.0
901123	02	01	02	02	02	4	01	3.0	14 11 n	111 57 w	28.3	75.0	58.0
901123	03	10	04	09	01	4	74	2.2	14 29 n	112 01 w	18.3	71.0	54.0
901126	01	02	03	01	03	3	74	0.8	17 00 n	111 32 w	100.0	27.0	23.0

Table 3. (continued)

Sightings by Species

species: SPINNER DOLPHIN (STENELLA LONGIROSTRIS) species code: 3

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900811	01	01	01			4	55	0.2	04 10 n	121 02 w	0.3	32.0	23.0
901110	09	03	14	01	03	2	01	0.3	11 06 n	107 12 w	100.0	16.0	12.0
901112	01	14	04	11	01	3	73	5.1	08 54 n	111 52 w	31.6	89.0	35.0
901121	02	08	02	10	02	3	73	1.4	12 35 n	113 50 w	0.0*	300.0	182.0

Table 3. (continued)

Sightings by Species

species: COMMON DOLPHIN (DELPHINUS DELPHIS) species code: 5

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
901202	03	05	03	08	02	4	22	0.4	23 18 n	112 52 w	100.0	45.0	28.0
901203	01	06	01	02	02	5	73	0.8	25 23 n	114 22 w	100.0	255.0	197.0
901203	05	04	02	06	02	3	07	0.5	26 06 n	113 07 w	100.0	213.0	183.0
901203	07	01	04	06	03	3	74	6.9	26 15 n	113 50 w	100.0	175.0	77.0
901204	01	01	01	06	03	5	01	4.6	27 06 n	115 44 w	100.0	127.0	83.0
901205	03	02	03	04	02	2	76	3.7	30 10 n	116 16 w	100.0	562.0	447.0
901205	04	01	05	05	02	2	73	0.0	30 19 n	116 16 w	100.0	327.0	262.0

Table 3. (continued)

Sightings by Species

species: COASTAL SPOTTED DOLPHIN (S.A. GRAFFMANI) species code: 6

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900831	01	03	01	02	02	4	56	0.6	13 41 n	090 54 w	100.0	10.0	8.0
900927	02	02	03			3	77	1.4	07 22 n	082 08 w	100.0	19.0	16.0

Table 3. (continued)

Sightings by Species

species: EASTERN SPINNER DOLPHIN (STENELLA LONGIROSTRIS) species code: 10

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
				horz.	vert.							best	low
yrmody			number			number	by	dist.(km)	deg min	deg min	(% of school)		
900822	01	01	01	11	03	2	69	2.6	13 22 n	103 46 w	30.0	210.0	170.0
900822	02	06	04	11	01	4	55	3.6	13 16 n	103 19 w	15.7	295.0	212.0
900823	01	05	02	11	02	2	71	0.4	12 24 n	100 31 w	36.7	107.0	83.0
900824	01	01	02			3	56	2.3	12 06 n	097 42 w	100.0	242.0	220.0
900824	04	04	05	12	12	1	69	3.6	12 02 n	097 01 w	100.0	132.0	117.0
900824	09	01	09	07	02	4	71	1.4	12 06 n	096 20 w	59.0	100.0	85.0
900825	01	01	01			4	55	4.4	12 31 n	093 40 w	48.3	433.0	367.0
900825	04	04	07	07	02	4	56	2.9	13 05 n	092 54 w	58.3	650.0	667.0
900902	01	01	01	05	03	2	67	3.8	10 21 n	094 39 w	3.3	710.0	645.0
900902	06	04	07	11	12	1	55	0.0	10 21 n	095 42 w	41.0	88.0	73.0
900903	04	06	03			3	67	1.7	11 11 n	099 00 w	46.0	217.0	203.0
900903	05	01	04	09	01	3	55	0.3	11 20 n	099 05 w	33.8	273.0	239.0
900903	06	02	05	11	02	3	56	7.4	11 28 n	099 11 w	42.2	315.0	292.0
901030	05	01	08	09	01	2	07	0.7	15 46 n	099 03 w	3.2	173.0	141.0
901031	05	01	05	07	01	2	74	1.4	16 14 n	101 42 w	91.7	87.0	69.0
901031	10	01	10	11	02	2	22	1.0	16 22 n	102 22 w	100.0	26.0	21.0
901031	13	01	14	11	03	2	76	1.7	16 25 n	102 30 w	78.3	55.0	44.0
901101			10	04	02	3	99	0.3	16 51 n	104 20 w	100.0	48.0	32.0
901101	03	02	08	03	02	1	01	1.5	16 44 n	104 20 w	100.0	16.0	12.0
901108	02	09	02	01	01	4	73	4.1	17 16 n	105 42 w	83.0	200.0	130.0
901108	04	02	05	02	02	4	76	5.1	16 59 n	105 48 w	85.0	210.0	127.0
901108	05	01	06	02	03	4	22	1.2	16 52 n	105 51 w	2.3	123.0	65.0
901109	01	05	01	10	02	4	22	0.1	15 16 n	105 53 w	32.0	26.0	22.0
901109	05	01	04	02	02	4	22	0.8	14 19 n	105 59 w	100.0	27.0	16.0
901109	06	03	05	02	02	4	76	1.3	14 06 n	106 03 w	90.0	182.0	80.0
901110			09	01	01	3	99	4.3	11 28 n	106 58 w	100.0	79.0	59.0
901110	01	04	01	09	03	5	76	1.7	12 16 n	106 31 w	82.7	343.0	303.0
901110	02	01	03	09	02	4	74	6.5	12 09 n	106 30 w	87.7	212.0	120.0
901110	04	04	07	11	01	2	76	5.3	11 40 n	106 40 w	57.3	275.0	223.0
901111	02	03	02	07	02	1	74	4.3	10 22 n	108 57 w	75.7	66.0	45.0
901119	04	02	05	02	02	2	76	3.2	10 04 n	114 34 w	32.2	128.0	93.0
901120	02	07	01	03	01	5	76	3.4	11 10 n	111 13 w	73.3	98.0	82.0
901121	01	17	01	07	01	4	73	0.3	12 24 n	113 16 w	100.0	79.0	58.0
901122			04	03	01	3	99	4.6	13 34 n	114 52 w	87.4	48.0	30.0
901122	01	03	02	01	02	3	22	2.0	13 26 n	115 14 w	78.3	133.0	88.0
901123	02	01	02	02	02	4	01	3.0	14 11 n	111 57 w	71.7	75.0	58.0
901123	03	10	04	09	01	4	74	2.2	14 29 n	112 01 w	65.0	71.0	54.0
901126	06	02	09	04	01	1	07	5.3	17 10 n	110 50 w	100.0	54.0	44.0

Table 3. (continued)

Sightings by Species

species: WHITEBELLY SPINNER DOLPHIN (STENELLA LONGIROSTRIS) species code: 11

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900804	01	11	02	12	12	3	71	3.4	21 36 n	116 55 w	5.0	68.0	62.0
900806	01	16	03	01	12	5	69	2.5	17 03 n	122 53 w	45.0	102.0	88.0
900807	02	05	02	08	02	5	56	1.4	15 39 n	125 00 w	93.3	117.0	90.0
900908	05	03	01			4	56	2.7	05 03 n	112 15 w	20.0	193.0	178.0
900911	02	06	03	11	01	5	71	2.3	03 53 n	113 46 w	85.0	155.0	140.0
900912	03	11	04	12	12	4	71	5.0	03 14 n	110 53 w	63.3	103.0	90.0
900922	01	03	01	06	01	4	56	6.2	01 25 n	091 34 w	19.3	838.0	743.0
901119	08	01	08	03	01	1	76	2.2	10 16 n	114 06 w	100.0	25.0	21.0
901119	09	05	09	06	01	2	22	0.6	10 24 n	113 58 w	43.3	148.0	112.0

Table 3. (continued)

Sightings by Species

species: STRIPED DOLPHIN (S. COERULEOALBA) species code: 13

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900803	01	02	01	01	02	4	67	3.2	21 53 n	114 21 w	100.0	27.0	21.0
900805	04	01	07	01	03	4	55	0.1	18 27 n	120 20 w	100.0	22.0	19.0
900806	02	05	04	01	02	5	69	0.3	16 51 n	123 19 w	100.0	14.0	11.0
900806	03	01	05	01	02	5	69	0.1	16 52 n	123 22 w	100.0	17.0	9.0
900810	04	02	04			2	67	3.6	05 46 n	122 25 w	100.0	162.0	142.0
900810	06	03	08			3	69	0.7	05 19 n	122 10 w	100.0	135.0	115.0
900821	01	13	01	06	01	2	55	3.1	13 54 n	105 29 w	100.0	52.0	41.0
900821	02	02	02	06	02	2	56	1.8	13 50 n	105 26 w	100.0	56.0	50.0
900901	09	01	15			2	56	4.5	10 24 n	092 44 w	100.0	247.0	217.0
900901	10	01	16			2	67	4.3	10 19 n	092 51 w	100.0	63.0	53.0
900901	12	01	20			2	77	1.8	10 17 n	092 53 w	100.0	38.0	30.0
900902	02	02	03	06	02	3	71	3.7	10 21 n	094 59 w	100.0	80.0	70.0
900902	03	01	04	06	01	3	77	1.8	10 22 n	095 08 w	100.0	43.0	38.0
900902	05	01	06	06	01	2	69	3.5	10 21 n	095 24 w	100.0	60.0	52.0
900902	08	01	10	11	01	1	69	3.5	10 24 n	096 00 w	100.0	63.0	53.0
900904	05	04	07	01	01	3	69	0.5	10 53 n	102 00 w	100.0	47.0	40.0
900904	06	05	09	01	01	3	77	0.3	10 43 n	102 09 w	100.0	32.0	27.0
900905	05	02	03			3	71	0.5	09 09 n	104 06 w	100.0	12.0	11.0
900905	06	08	05			5	55	2.8	08 45 n	104 29 w	100.0	50.0	47.0
900909	04	03	04			4	67	1.2	05 03 n	115 47 w	100.0	158.0	140.0
900911	01	05	02	11	02	5	71	4.0	04 04 n	114 01 w	100.0	113.0	87.0
900912	02	09	02	10	02	4	71	0.3	03 27 n	111 21 w	100.0	23.0	20.0
900916	03	06	03			3	69	3.9	00 48 s	106 12 w	100.0	32.0	29.0
900919	02	14	04	12	12	4	69	0.2	03 46 n	098 39 w	100.0	44.0	32.0
900921	01	04	02			4	71	4.1	03 18 n	094 24 w	100.0	40.0	37.0
900922	04	02	05	06	03	3	67	1.1	01 17 n	091 15 w	100.0	35.0	20.0
900925	01	06	02			4	69	0.3	03 35 n	084 42 w	100.0	54.0	46.0
900925	03	01	04	03	01	4	69	3.0	03 46 n	084 42 w	100.0	66.0	62.0
900925	05	02	07			4	69	3.3	04 10 n	084 38 w	100.0	38.0	33.0
900925	07	03	08	09	01	4	69	3.0	04 26 n	084 38 w	100.0	33.0	28.0
900925	11	01	13			3	55	4.9	04 55 n	084 40 w	100.0	37.0	32.0
900926	06	03	05			4	71	3.3	05 31 n	081 50 w	100.0	45.0	40.0
901006	02	01	03			5	01	5.7	05 00 n	082 28 w	100.0	52.0	43.0
901008	01	05	02	04	02	5	73	2.6	03 18 n	083 47 w	100.0	25.0	12.0
901008	01	05	03	04	02	5	73	0.4	03 19 n	083 48 w	100.0	19.0	12.0
901008	03	01	04	04	02	5	76	0.3	03 27 n	083 47 w	100.0	6.0	4.0
901009			01			5	04	4.2	06 06 n	085 25 w	100.0	37.0	29.0
901013	01	05	02	05	02	4	76	0.3	04 23 n	092 41 w	100.0	21.0	17.0
901013	01	06	03			3	07	0.1	04 27 n	092 49 w	100.0	72.0	60.0
901013	04	04	08	12	12	4	73	0.4	04 42 n	093 25 w	100.0	41.0	31.0
901014	08	05	07	07	02	4	73	3.0	07 14 n	091 33 w	100.0	64.0	53.0
901014	09	01	08	07	02	4	74	3.5	07 22 n	091 28 w	100.0	18.0	12.0
901015	01	01	02			3	01	0.9	08 42 n	090 18 w	100.0	43.0	36.0
901015	02	01	03	02	03	3	74	1.2	08 46 n	090 14 w	100.0	20.0	16.0

Table 3. (continued)

Sightings by Species

species: STRIPED DOLPHIN (S. COERULEOALBA) species code: 13

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
901015	08	03	09	07	02	2	76	0.0	09 46 n	089 15 w	100.0	19.0	16.0
901015	10	01	11	07	02	2	07	0.2	09 52 n	089 08 w	100.0	24.0	17.0
901017	04	08	02	10	01	4	07	4.9	10 53 n	091 35 w	100.0	19.0	15.0
901017	06	05	03	01	02	4	76	1.5	10 35 n	091 59 w	100.0	11.0	6.0
901017	08	03	06	01	03	3	01	0.1	10 20 n	092 11 w	100.0	16.0	8.0
901021	06	07	07			5	01	1.5	08 59 n	097 54 w	100.0	26.0	16.0
901021	07	01	08			5	76	0.1	09 02 n	097 53 w	100.0	15.0	8.0
901021	08	01	09			5	73	0.1	09 03 n	097 52 w	100.0	2.0	2.0
901022	04	02	06	12	12	5	76	0.5	10 25 n	096 09 w	100.0	21.0	14.0
901023	04	08	03			3	22	0.1	12 00 n	093 21 w	100.0	51.0	42.0
901101	02	02	05	03	03	1	01	0.0	16 31 n	104 21 w	100.0	28.0	23.0
901101	04	03	09	04	02	3	07	1.8	16 53 n	104 20 w	100.0	26.0	20.0
901101	07	01	14	08	02	3	76	0.7	17 44 n	104 16 w	100.0	23.0	20.0
901115	04	05	01			4	76	0.3	00 25 n	114 44 w	100.0	40.0	31.0
901116	03	06	04			4	76	1.4	01 19 n	117 06 w	100.0	22.0	15.0
901118	04	03	05	08	01	3	01	1.1	08 42 n	116 20 w	100.0	47.0	37.0
901118	06	04	07	08	03	3	74	2.5	09 02 n	116 20 w	100.0	28.0	19.0
901118	06	05	08	08	03	3	01	0.8	09 04 n	116 20 w	100.0	18.0	12.0
901119	02	01	02	02	01	2	22	0.4	09 55 n	114 42 w	100.0	51.0	35.0
901119	03	01	03	02	02	2	01	0.0	10 00 n	114 41 w	100.0	45.0	32.0
901120	06	05	04			4	73	1.3	11 29 n	110 38 w	100.0	58.0	47.0
901123	01	06	01	02	02	4	76	0.6	14 10 n	112 00 w	100.0	15.0	9.0
901124	02	17	03			3	73	2.7	15 44 n	115 54 w	100.0	13.0	10.0
901126	08	01	12	05	02	1	76	3.0	17 14 n	110 40 w	100.0	62.0	52.0
901126	09	01	13			1	76	1.0	17 13 n	110 31 w	100.0	41.0	35.0
901126	10	01	14	05	02	1	01	4.8	17 09 n	110 23 w	100.0	15.0	12.0
901127	04	12	08	09	01	2	76	1.2	17 51 n	112 50 w	100.0	10.0	10.0
901130			01	04	02	3	99	2.8	19 14 n	110 29 w	100.0	36.0	30.0

Table 3. (continued)

Sightings by Species

species: ROUGH-TOOTHED DOLPHIN (STENO BREDANENSIS) species code: 15

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900816	03	03	01	07	01	4	71	0.7	00 57 n	107 03 w	57.5	30.0	28.0
900817	03	01	05			4	69	0.2	04 06 n	105 47 w	100.0	13.0	12.0
900822	02	06	04	11	01	4	55	3.6	13 16 n	103 19 w	7.0	295.0	212.0
900822	05	02	07	06	02	3	77	0.0	12 55 n	102 27 w	100.0	4.0	4.0
900824	05	01	06	12	12	1	77	1.4	12 03 n	096 54 w	100.0	5.0	4.0
900824	06	01	07			1	71	0.3	12 03 n	096 53 w	100.0	8.0	7.0
900825	04	05	09	06	02	4	69	0.9	13 05 n	092 53 w	100.0	9.0	7.0
900901	05	01	08	12	12	2	67	0.5	10 56 n	092 31 w	100.0	10.0	8.0
900901	07	03	13			2	55	2.8	10 40 n	092 37 w	100.0	7.0	6.0
900902	09	03	12	11	03	2	56	0.5	10 25 n	096 10 w	100.0	8.0	6.0
900916	04	04	04	08	01	4	71	3.5	00 39 s	105 58 w	100.0	62.0	52.0
900917	07	02	05	07	01	5	77	1.1	00 56 n	103 31 w	0.7	26.0	22.0
900925	09	01	10			4	55	1.3	04 39 n	084 38 w	100.0	8.0	7.0
901010	03	05	03	08	01	4	07	0.1	09 31 n	087 04 w	48.2	45.0	38.0
901017	02	02	01			4	76	1.2	11 10 n	090 59 w	100.0	33.0	28.0
901110	06	01	08	01	01	3	76	0.1	11 28 n	106 58 w	100.0	13.0	11.0
901118	02	07	03	12	12	3	76	0.2	08 15 n	116 22 w	71.7	19.0	15.0
901201	02	07	04	09	03	4	01	0.1	21 03 n	111 00 w	100.0	6.0	5.0

Table 3. (continued)

Sightings by Species

species: "SHORT-SNOUTED WHITEBELLY" (DELPHINUS DELPHIS OFFSHORE) species code: 17

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900804	01	11	02	12	12	3	71	3.4	21 36 n	116 55 w	61.7	68.0	62.0
900901	03	05	04	08	01	2	67	8.2	11 10 n	092 08 w	100.0	400.0	363.0
900901	03	05	05	08	01	2	67	6.9	11 13 n	092 21 w	100.0	597.0	511.0
900901	07	01	11	02	01	2	67	6.8	10 47 n	092 35 w	100.0	0.0*	50.0
901009			04			5	99	0.4	06 48 n	085 56 w	100.0	1091.0	918.0
901010	05	04	04	12	01	5	76	2.3	09 23 n	087 24 w	100.0	35.0	30.0
901011	03	01	02	09	01	4	07	2.5	07 59 n	089 32 w	100.0	163.0	124.0
901011	09	01	07			5	22	1.1	07 14 n	089 47 w	100.0	447.0	340.0
901012	05	01	02	12	12	5	76	2.5	05 31 n	090 45 w	100.0	37.0	22.0
901012	06	01	03	01	01	5	74	0.4	05 28 n	090 44 w	100.0	9.0	6.0
901014	01	04	02	02	03	4	73	0.0	06 21 n	092 27 w	63.0	95.0	68.0
901014	02	02	03	02	02	4	76	0.6	06 29 n	092 16 w	100.0	138.0	110.0
901014	05	01	05	03	01	4	07	2.6	06 45 n	092 02 w	100.0	640.0	462.0
901014	10	01	09	08	03	4	76	5.9	07 23 n	091 24 w	100.0	210.0	180.0
901016	02	01	02	06	01	3	76	7.4	11 10 n	088 23 w	100.0	644.0	512.0
901017	07	03	05	02	02	3	73	1.6	10 29 n	092 07 w	100.0	37.0	27.0
901126	07	01	10	04	01	1	22	0.3	17 14 n	110 42 w	100.0	14.0	9.0
901201	01	18	02	08	02	4	76	3.7	20 49 n	110 47 w	100.0	32.0	25.0
901205			04				99	0.0	30 16 n	116 12 w	100.0	837.0	665.0
901205	05	05	09	07	02	1	73	2.7	30 31 n	116 15 w	100.0	812.0	612.0
901205	07	04	10	09	02	2	74	7.6	30 47 n	116 22 w	120.0	1093.0	878.0

Table 3. (continued)

Sightings by Species

species: BOTTLENOSED DOLPHIN (TURSIOPS TRUNCATUS) species code: 18

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900804	02	09	03	02	01	4	67	2.1	21 12 n	117 22 w	100.0	20.0	17.0
900822	02	06	04	11	01	4	55	3.6	13 16 n	103 19 w	7.3	295.0	212.0
900825	02	05	04	07	01	4	77	0.0	12 47 n	093 20 w	100.0	10.0	9.0
900831	02	03	03	02	02	3	55	0.5	13 29 n	091 00 w	100.0	8.0	7.0
900831	03	01	04	02	03	3	55	0.9	13 28 n	091 01 w	81.5	9.0	42.0
900901	01	02	01	08	03	2	55	5.0	11 44 n	092 02 w	15.7	42.0	35.0
900901	07	01	12	02	01	2	69	0.6	10 46 n	092 35 w	100.0	5.0	5.0
900901	11	01	19			2	67	0.4	10 18 n	092 53 w	100.0	17.0	15.0
900902	04	01	05	06	01	3	55	5.1	10 21 n	095 14 w	4.0	202.0	174.0
900903	04	06	03			3	67	1.7	11 11 n	099 00 w	3.3	217.0	203.0
900903	05	01	04	09	01	3	55	0.3	11 20 n	099 05 w	2.8	273.0	239.0
900903	06	02	05	11	02	3	56	7.4	11 28 n	099 11 w	3.0	315.0	292.0
900904	02	01	02			3	77	3.2	11 21 n	101 19 w	0.7	97.0	74.0
900912	04	01	06	05	01	4	77	1.6	03 19 n	110 48 w	100.0	5.0	4.0
900917	07	02	05	07	01	5	77	1.1	00 56 n	103 31 w	6.0	26.0	22.0
900923	04	01	10	06	01	4	71	2.3	01 24 n	088 24 w	6.7	207.0	193.0
900927	01	01	01			3	55	0.0	07 20 n	082 05 w	13.3	26.0	24.0
900928	01	05	03			3	55	0.9	08 08 n	083 34 w	6.7	25.0	23.0
901009			02	12	12	6	76	3.6	06 35 n	085 50 w	8.7	34.0	27.0
901010	03	05	03	08	01	4	07	0.1	09 31 n	087 04 w	1.8	45.0	38.0
901011	08	04	06	02	02	5	22	0.6	07 17 n	089 48 w	78.3	46.0	39.0
901014	07	01	06			4	76	1.1	06 55 n	091 50 w	100.0	48.0	41.0
901015			01			3	76	0.0	08 42 n	090 19 w	100.0	8.0	8.0
901015	07	01	08	06	01	3	73	0.9	09 35 n	089 26 w	78.7	95.0	78.0
901018	06	02	05	01	02	4	73	1.7	08 58 n	094 53 w	20.0	72.0	57.0
901021	01	01	02			5	76	0.4	08 11 n	098 49 w	6.0	76.0	54.0
901021	04	01	03			5	76	1.3	08 31 n	098 31 w	40.7	70.0	55.0
901028	02	02	02	11	01	2	07	0.7	13 49 n	091 25 w	100.0	3.0	2.0
901028	04	01	04	11	02	2	01	1.0	13 44 n	091 29 w	100.0	36.0	36.0
901028	04	03	07	11	02	2	01	5.4	13 44 n	091 39 w	1.0	23.0	18.0
901028	04	04	08	11	02	1	22	1.1	13 44 n	091 43 w	100.0	18.0	18.0
901028	04	06	09	11	03	2	22	1.4	13 47 n	091 58 w	100.0	9.0	8.0
901030			09	11	02	2	99	5.6	15 49 n	099 16 w	33.7	56.0	43.0
901030	02	03	02	08	01	2	73	0.1	15 46 n	098 44 w	100.0	6.0	5.0
901031	12	01	13	11	02	2	73	3.8	16 22 n	102 27 w	100.0	7.0	6.0
901108	02	09	02	01	01	4	73	4.1	17 16 n	105 42 w	1.0	200.0	130.0
901118	02	07	03	12	12	3	76	0.2	08 15 n	116 22 w	28.3	19.0	15.0
901121	03	02	04	11	02	3	76	0.1	12 36 n	114 12 w	91.0	16.0	12.0
901123	03	09	03	09	01	3	01	0.1	14 24 n	111 55 w	100.0	2.0	2.0
901125	03	04	02	02	02	5	76	0.2	16 24 n	114 40 w	100.0	4.0	4.0
901125	04	05	03			4	22	1.1	16 27 n	114 19 w	100.0	187.0	117.0
901126			15	05	03	1	99	0.0	17 09 n	110 23 w	67.0	3.0	3.0
901126	01	01	01	01	03	3	74	0.2	16 59 n	111 40 w	100.0	6.0	5.0
901126	01	02	05	01	03	3	76	0.8	17 01 n	111 28 w	100.0	1.0	1.0

Table 3. (continued)

Sightings by Species

species: BOTTLENOSED DOLPHIN (TURSIOPS TRUNCATUS) species code: 18

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
901127			07	08	01	2	99	0.0	17 48 n	112 43 w	100.0	0.0*	2.0
901127	04	04	05	07	02	2	76	7.4	17 33 n	112 09 w	100.0	1.0	1.0
901129	01	04	01	02	03	4	22	1.0	18 58 n	112 07 w	100.0	44.0	36.0
901202	01	07	01	06	02	5	07	0.3	22 51 n	112 30 w	100.0	59.0	57.0
901202	04	04	04	09	02	5	01	1.2	23 35 n	113 12 w	34.3	17.0	14.0

Table 3. (continued)

Sightings by Species

species: RISSO'S DOLPHIN (GRAMPUS GRISEUS) species code: 21

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
				horz.	vert.								
yrmody			number			number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900912	04	01	05	05	01	4	77	1.6	03 19 n	110 48 w	100.0	35.0	31.0
900914	01	10	02	09	02	4	71	0.1	00 53 s	110 00 w	100.0	7.0	7.0
900926	02	01	01			5	56	0.2	05 30 n	082 52 w	100.0	11.0	8.0
901005	03	01	03			4	01	2.1	07 21 n	084 23 w	100.0	12.0	8.0
901006	01	05	01			5	07	0.4	05 04 n	082 32 w	100.0	4.0	2.0
901006	03	03	04			5	76	0.9	04 54 n	082 20 w	100.0	1.0	1.0
901030			09	11	02	2	99	5.6	15 49 n	099 16 w	66.3	56.0	43.0
901101	06	04	13	08	02	3	76	0.4	17 40 n	104 16 w	100.0	12.0	10.0
901119	01	03	01	02	01	2	22	2.5	09 55 n	114 45 w	100.0	10.0	7.0
901125	06	05	04	07	02	4	73	0.0	16 31 n	113 51 w	100.0	9.0	7.0

Table 3. (continued)

Sightings by Species

species: PACIFIC WHITE-SIDED DOLPHIN (LAGENORHYNCHUS OBLIQUIDENS) species code: 22

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
901205			11			1	07	0.1	30 45 n	116 29 w	100.0	73.0	58.0

Table 3. (continued)

Sightings by Species

species: FRASER'S DOLPHIN (LAGENODELPHIS HOSEI) species code: 26

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900810	01	01	01			2	69	1.0	06 38 n	122 58 w	100.0	143.0	125.0
900910	03	01	03	11	02	4	55	3.7	04 44 n	116 58 w	100.0	203.0	187.0
900911			01			4	04	1.7	04 06 n	114 11 w	100.0	50.0	40.0
900924	03	04	02			4	55	0.0	01 26 n	085 53 w	63.3	270.0	243.0

Table 3. (continued)

Sightings by Species

species: MELON-HEADED WHALE (PEPONOCEPHALA ELECTRA) species code: 31

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900924	03	04	02			4	55	0.0	01 26 n	085 53 w	36.7	270.0	243.0

Table 3. (continued)

Sightings by Species

species: PYGMY KILLER WHALE (FERESA ATTENUATA) species code: 32

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900823	03	01	03			2	69	0.0	12 22 n	100 19 w	100.0	11.0	9.0
900824	06	02	08			1	55	0.4	12 03 n	096 51 w	100.0	14.0	12.0
901031			02	02	02	2	04	0.1	16 09 n	101 13 w	100.0	38.0	33.0
901031	06	01	06	08	01	2	73	1.1	16 18 n	101 52 w	100.0	20.0	17.0
901031	07	04	07	10	01	2	76	1.6	16 23 n	102 15 w	100.0	29.0	27.0
901031	08	01	08	11	02	2	73	0.9	16 22 n	102 18 w	100.0	14.0	14.0
901101	05	05	12	06	01	3	07	1.6	17 16 n	104 18 w	100.0	19.0	11.0

Table 3. (continued)

Sightings by Species

species: FALSE KILLER WHALE (PSEUDORCA CRASSIDENS) species code: 33

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900815			02			5	04	1.3	00 57 n	109 54 w	100.0	10.0	8.0
900923	01	04	05	01	02	4	71	0.1	01 18 n	089 30 w	100.0	11.0	7.0

Table 3. (continued)

Sightings by Species

species: PILOT WHALE (GLOBICEPHALA SP.) species code: 34

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900916			05	06	01	4	67	0.7	00 40 s	105 57 w	100.0	16.0	13.0

Table 3. (continued)

Sightings by Species

species: SHORT-FINNED PILOT WHALE (GLOBICEPHALA MACRORHYNCHUS) species code: 36

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900813	01	05	01	11	02	4	56	1.1	00 57 n	115 45 w	100.0	19.0	16.0
900813	02	11	04			4	77	1.4	00 53 n	114 50 w	100.0	15.0	13.0
900815	01	08	01			5	56	1.6	00 59 n	110 13 w	100.0	15.0	12.0
900816	03	03	01	07	01	4	71	0.7	00 57 n	107 03 w	42.5	30.0	28.0
900817	01	22	01			4	55	0.8	03 47 n	105 48 w	100.0	0.0*	5.0
900818	02	12	01	03	01	4	69	1.1	06 31 n	106 22 w	100.0	9.0	8.0
900915	02	03	01			4	56	1.6	02 34 s	109 20 w	100.0	16.0	13.0
900917	07	02	05	07	01	5	77	1.1	00 56 n	103 31 w	26.7	26.0	22.0
900927	01	01	01			3	55	0.0	07 20 n	082 05 w	86.7	26.0	24.0
900928	01	05	03			3	55	0.9	08 08 n	083 34 w	26.7	25.0	23.0
900928	02	02	05	06	01	3	71	4.5	08 13 n	083 42 w	100.0	30.0	28.0
900928	03	02	06	05	01	3	56	0.6	08 11 n	083 48 w	100.0	20.0	15.0
901005	01	03	02			4	01	5.6	07 55 n	084 32 w	100.0	15.0	12.0
901009			02	12	12	6	76	3.6	06 35 n	085 50 w	58.0	34.0	27.0
901010	03	04	02	07	01	4	74	2.2	09 35 n	086 57 w	100.0	10.0	7.0
901011			08			4	74	0.1	07 16 n	089 49 w	100.0	12.0	8.0
901011	06	02	04	01	01	5	01	2.0	07 29 n	089 44 w	100.0	19.0	14.0
901011	07	02	05	01	02	5	76	0.0	07 24 n	089 46 w	100.0	7.0	6.0
901011	08	04	06	02	02	5	22	0.6	07 17 n	089 48 w	21.7	46.0	39.0
901014	03	05	04	03	01	4	22	2.4	06 41 n	092 04 w	100.0	14.0	10.0
901015	07	01	08	06	01	3	73	0.9	09 35 n	089 26 w	21.3	95.0	78.0
901015	11	01	12	07	02	1	07	3.8	09 54 n	089 08 w	100.0	25.0	20.0
901021	04	01	03			5	76	1.3	08 31 n	098 31 w	59.3	70.0	55.0
901021	05	02	06			5	01	0.2	08 34 n	098 22 w	100.0	25.0	23.0
901202	02	01	02	06	02	5	22	1.8	22 59 n	112 33 w	100.0	16.0	14.0
901202	04	04	04	09	02	5	01	1.2	23 35 n	113 12 w	65.7	17.0	14.0

Table 3. (continued)

Sightings by Species

species: KILLER WHALE (ORCINUS ORCA) species code: 37

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900901	02	01	03	08	02	2	55	0.7	11 36 n	092 08 w	100.0	1.0	1.0
900901	04	04	07	12	12	1	56	3.5	10 56 n	092 28 w	100.0	5.0	4.0
900924	05	01	03			4	71	1.4	01 24 n	085 28 w	90.0	8.0	8.0
900926	03	05	03	12	02	4	77	2.0	05 30 n	082 44 w	100.0	1.0	1.0
901029			01			7	73	0.2	14 00 n	094 30 w	100.0	1.0	1.0
901030	01	09	01	07	02	2	22	0.7	15 43 n	098 24 w	100.0	1.0	1.0
901108			04			4	99	0.1	17 06 n	105 45 w	100.0	4.0	3.0
901110	08	04	13	02	03	2	22	2.1	11 09 n	107 08 w	100.0	2.0	2.0

Table 3. (continued)

Sightings by Species

species: SPERM WHALE (PHYSETER MACROCEPHALUS) species code: 46

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
				horz.	vert.								
yrmody			number			number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900806	01	14	02	12	12	5	55	5.0	17 10 n	122 41 w	100.0	1.0	1.0
900925			09			4	99	4.2	04 32 n	084 35 w	100.0	12.0	9.0
900925	01	03	01			4	71	4.5	03 19 n	084 42 w	100.0	6.0	4.0
900925	04	03	06			3	71	0.6	03 59 n	084 40 w	100.0	12.0	10.0
900925	12	01	14			3	71	5.5	04 59 n	084 32 w	100.0	15.0	10.0
901008	01	02	01			5	22	1.3	03 09 n	083 43 w	100.0	1.0	1.0
901012	03	02	01	10	01	5	73	1.6	05 34 n	090 43 w	100.0	1.0	1.0
901013	02	04	05	06	01	4	22	0.9	04 32 n	092 59 w	100.0	9.0	9.0
901013	04	03	06	12	12	4	76	5.3	04 39 n	093 17 w	100.0	*4.0*	*3.0*
901122	01	01	01	01	03	2	74	1.3	13 23 n	115 26 w	100.0	1.0	1.0
901204	02	10	02	09	02	4	73	3.6	27 30 n	116 50 w	100.0	2.0	1.0
901204	04	01	03	08	02	4	74	1.8	27 33 n	117 02 w	100.0	1.0	1.0

Table 3. (continued)

Sightings by Species

species: DWARF SPERM WHALE (KOGIA SIMUS) species code: 48

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900805	01	11	02			3	55	0.0	19 08 n	119 06 w	100.0	1.0	1.0
900923	01	02	03			4	55	0.1	01 19 n	089 34 w	100.0	2.0	2.0
901023	07	02	05	07	03	1	01	2.3	12 22 n	092 46 w	100.0	1.0	1.0
901101			03	03	03	2	74	1.4	16 28 n	104 23 w	100.0	1.0	1.0
901101	02	01	04	03	03	2	76	0.1	16 30 n	104 21 w	100.0	1.0	1.0
901118	02	01	01			3	73	0.0	07 50 n	116 24 w	100.0	1.0	1.0
901118	02	07	02	12	12	3	01	0.2	08 14 n	116 22 w	100.0	2.0	2.0

Table 3. (continued)

Sightings by Species

species: BEAKED WHALE (ZIPHIID) species code: 49

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900824	10	01	10	07	03	2	56	0.2	12 06 n	096 13 w	100.0	3.0	3.0
900825	02	03	02			4	56	1.5	12 43 n	093 28 w	100.0	2.0	2.0
900902	09	02	11	11	03	2	67	1.9	10 24 n	096 09 w	100.0	3.0	3.0
900921	03	16	07	05	02	5	67	2.3	02 25 n	093 13 w	100.0	1.0	1.0
900928	01	03	01	04	03	3	56	0.3	08 01 n	083 27 w	100.0	1.0	1.0
901008	03	04	05	05	01	5	22	0.4	03 41 n	083 56 w	100.0	4.0	4.0
901015	05	13	07	06	01	4	73	1.5	09 30 n	089 32 w	100.0	3.0	3.0
901016	05	02	04			3	07	2.5	11 29 n	088 00 w	100.0	3.0	3.0
901016	05	06	05			2	07	1.4	11 35 n	089 09 w	100.0	3.0	3.0
901119	06	01	06	02	01	1	73	1.0	10 08 n	114 30 w	100.0	1.0	1.0
901122	04	02	05	05	02	4	76	6.7	13 43 n	114 27 w	100.0	1.0	1.0

Table 3. (continued)

Sightings by Species

species: UNID. MESOPLODONT (MESOPLODON SP.) species code: 51

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900810	05	01	05			1	56	3.4	05 36 n	122 25 w	100.0	4.0	3.0
900813	02	05	03	11	01	4	67	0.1	00 55 n	115 20 w	100.0	2.0	2.0
900820	01	01	01			4	69	0.7	11 16 n	108 47 w	100.0	2.0	2.0
900825	04	04	08	07	02	4	56	2.4	13 04 n	092 56 w	100.0	0.0*	0.0*
900903	01	04	01			3	56	0.5	10 58 n	098 15 w	100.0	4.0	4.0
900908	06	03	02	12	01	4	55	0.1	04 58 n	112 30 w	100.0	1.0	1.0
900921	01	03	01			4	71	0.1	03 20 n	094 26 w	100.0	1.0	1.0
900926	08	03	06			5	67	0.6	05 28 n	081 30 w	100.0	1.0	1.0
901016	02	01	01	06	01	3	76	3.1	11 09 n	088 22 w	100.0	2.0	2.0
901031			17			2	76	0.6	16 25 n	102 43 w	100.0	2.0	2.0
901031	09	02	09	11	02	2	73	0.1	16 22 n	102 22 w	100.0	3.0	3.0
901101	05	04	11	06	01	3	74	2.8	17 04 n	104 20 w	100.0	1.0	1.0
901111			04	08	01	1	99	0.1	10 16 n	109 02 w	100.0	2.0	2.0
901112	01	02	02	08	03	3	74	3.4	09 21 n	110 58 w	100.0	1.0	1.0
901113			01			5	99	0.2	06 20 n	113 13 w	100.0	3.0	3.0
901118	06	01	06	08	02	3	73	0.5	08 54 n	116 21 w	100.0	1.0	1.0
901126	08	01	11	05	02	1	76	0.5	17 14 n	110 41 w	100.0	3.0	3.0
901205	01	05	02	03	03	3	73	2.6	29 51 n	116 22 w	100.0	1.0	1.0

Table 3. (continued)

Sightings by Species

species: CUVIER'S BEAKED WHALE (ZIPHIUS CAVIROSTRIS) species code: 61

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900909	05	04	05	12	01	4	71	1.7	05 03 n	115 55 w	100.0	2.0	2.0
900917	01	02	01			4	55	0.6	00 24 n	104 19 w	100.0	1.0	1.0
900918	03	06	02	07	12	4	55	0.4	02 09 n	101 13 w	100.0	3.0	3.0
900921	03	14	06	05	02	5	77	0.0	02 30 n	093 20 w	100.0	2.0	2.0
900925	04	01	05	03	01	4	55	0.0	03 54 n	084 40 w	100.0	2.0	2.0
901006	02	01	02			5	01	0.4	05 01 n	082 29 w	100.0	1.0	1.0
901015	05	08	06			4	74	1.7	09 14 n	089 47 w	100.0	2.0	2.0
901101	02	02	06	03	03	1	74	0.0	16 31 n	104 21 w	100.0	2.0	2.0
901110	08	03	12	02	03	3	07	0.2	11 15 n	107 06 w	100.0	1.0	1.0
901114			01	12	01	5	04	2.6	02 52 n	113 19 w	100.0	1.0	1.0
901123	04	05	05	10	02	3	76	0.8	14 35 n	112 16 w	100.0	2.0	2.0

Table 3. (continued)

Sightings by Species

species: RORQUAL (BALAENOPTERA SP.) species code: 70

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900805	03	13	05	01	02	4	55	0.1	18 30 n	120 16 w	100.0	1.0	1.0
900810	05	02	06			1	69	4.2	05 32 n	122 22 w	100.0	1.0	1.0
900814	02	09	02	11	01	5	56	0.3	01 07 n	112 19 w	100.0	1.0	1.0
900816	05	02	02	06	01	4	56	4.8	00 58 n	106 50 w	100.0	1.0	1.0
900816	05	04	03	06	02	4	69	0.5	00 58 n	106 46 w	100.0	2.0	2.0
900816	05	09	05	06	03	4	56	2.3	00 57 n	106 28 w	100.0	1.0	1.0
900823	04	06	06			2	77	2.5	12 15 n	099 58 w	100.0	1.0	1.0
900904	07	03	11	02	02	2	77	4.2	10 36 n	102 17 w	100.0	1.0	1.0
900905			02			2	69	0.2	09 18 n	103 56 w	100.0	1.0	1.0
900911	04	01	04	05	01	4	71	6.4	03 46 n	113 27 w	100.0	1.0	1.0
900914	01	06	01	09	02	4	55	0.3	00 44 s	110 04 w	100.0	1.0	1.0
900917	02	01	02			5	55	1.7	00 28 n	104 15 w	100.0	1.0	1.0
900917	08	02	06	07	01	4	71	4.5	00 56 n	103 27 w	100.0	2.0	2.0
900921	03	07	03	11	12	4	67	0.4	02 51 n	093 47 w	100.0	1.0	1.0
900921	03	09	04	04	12	4	69	0.8	02 46 n	093 41 w	100.0	1.0	1.0
900922	02	01	02	06	02	4	55	5.1	01 18 n	091 26 w	100.0	2.0	2.0
900922	04	02	04	06	03	3	56	7.9	01 17 n	091 17 w	100.0	0.0*	2.0
900923	01	01	02			4	71	6.6	01 19 n	089 37 w	100.0	0.0*	1.0
900923	03	04	07	06	01	5	69	3.2	01 24 n	088 38 w	100.0	1.0	1.0
901015			05	11	03	4	01	1.4	08 50 n	090 13 w	100.0	1.0	1.0
901020	02	03	02			5	76	0.2	07 00 n	098 58 w	100.0	1.0	1.0
901021	05	01	05	03	01	5	76	2.0	08 33 n	098 23 w	100.0	1.0	1.0
901023	01	01	01			3	76	7.6	11 30 n	094 16 w	100.0	1.0	1.0
901110			02			5	74	0.0	12 16 n	106 30 w	100.0	1.0	1.0
901110			04			4	01	2.7	12 06 n	106 25 w	100.0	1.0	1.0
901112			05	12	01	3	73	0.0	08 50 n	111 52 w	100.0	1.0	1.0
901112	01	02	01	08	03	3	74	1.6	09 23 n	110 54 w	100.0	1.0	1.0
901116	03	05	03	04	02	4	74	1.7	01 10 n	117 06 w	100.0	1.0	1.0
901121			03	11	02	3	99	2.2	12 34 n	113 55 w	100.0	0.0*	1.0
901124	02	01	02	06	03	3	74	5.2	15 02 n	114 25 w	100.0	1.0	1.0
901127			09			4	01	0.3	17 51 n	112 56 w	100.0	1.0	1.0
901127	04	04	06	07	02	2	76	7.0	17 34 n	112 11 w	100.0	1.0	1.0

Table 3. (continued)

Sightings by Species

species: BRYDE'S WHALE (B. EDENI) species code: 72

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900924	02	03	01			3	67	0.4	01 26 n	086 02 w	100.0	1.0	1.0
901007	05	02	02			5	07	0.5	03 03 n	082 05 w	100.0	1.0	1.0
901017			04	01	02	4	01	0.0	10 35 n	091 59 w	100.0	1.0	1.0
901120	04	01	02	03	01	4	07	0.0	11 16 n	111 11 w	100.0	6.0	5.0

Table 3. (continued)

Sightings by Species

species: BLUE WHALE (B. MUSCULUS) species code: 75

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
				horz.	vert.								
yrmody			number			number	by	dist.(km)	deg min	deg min	(% of school)	best	low
901018			02			5	76	1.0	09 30 n	093 47 w	100.0	1.0	1.0
901018	03	02	03			4	76	0.7	09 26 n	094 03 w	100.0	1.0	1.0

Table 3. (continued)

Sightings by Species

species: UNIDENTIFIED DOLPHIN species code: 77

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900803	02	03	02	01	03	3	55	0.2	21 46 n	114 24 w	66.7	2.0	8.0
900804			04	02	01	4	69	0.3	21 12 n	117 22 w	100.0	70.0	47.0
900804	01	02	01			3	67	8.6	21 34 n	116 02 w	100.0	0.0*	2.0
900804	03	04	05	02	02	4	55	1.4	20 56 n	117 29 w	100.0	0.0*	5.0
900805	01	14	03	12	12	3	67	0.8	18 59 n	119 22 w	100.0	3.0	2.0
900806	01	10	01	07	01	5	69	10.2	17 18 n	122 26 w	100.0	0.0*	5.0
900807	01	01	01			4	55	1.3	15 54 n	124 53 w	100.0	0.0*	2.0
900810	06	01	07			3	71	7.6	05 25 n	122 16 w	100.0	0.0*	6.0
900817	01	22	02			4	55	4.5	03 50 n	105 48 w	100.0	0.0*	2.0
900817	04	03	06			4	55	1.0	04 18 n	105 46 w	100.0	0.0*	1.0
900819	01	01	01			4	55	0.1	09 13 n	108 23 w	100.0	1.0	1.0
900822	02	03	02	11	02	3	55	7.8	13 20 n	103 30 w	100.0	0.0*	10.0
900822	02	05	03	11	01	4	71	7.5	13 17 n	103 22 w	100.0	0.0*	2.0
900823	01	04	01	11	02	3	71	9.9	12 25 n	100 35 w	100.0	0.0*	2.0
900823	06	01	07	06	02	3	69	7.0	12 18 n	099 20 w	100.0	1.0	1.0
900823	06	05	08			2	56	2.8	12 17 n	099 10 w	100.0	0.0*	0.0*
900824	03	10	04	12	01	2	56	3.4	12 06 n	097 17 w	100.0	6.0	4.0
900825	02	04	03	07	01	4	69	4.4	12 44 n	093 25 w	100.0	1.0	1.0
900825	03	03	05	06	01	4	71	6.4	12 49 n	093 15 w	100.0	0.0*	2.0
900825	03	03	06	06	01	4	77	6.4	12 50 n	093 14 w	100.0	1.0	1.0
900831	02	01	02	02	02	4	77	0.1	13 34 n	090 57 w	100.0	1.0	1.0
900831	03	01	04	02	03	3	55	0.9	13 28 n	091 01 w	18.5	9.0	42.0
900831	04	01	05	02	03	3	67	1.1	13 22 n	091 04 w	100.0	2300.0	1533.0
900901	02	01	02	08	02	2	71	0.2	11 37 n	092 08 w	100.0	1.0	1.0
900901	06	02	10	02	01	2	69	0.7	10 49 n	092 34 w	100.0	100.0	80.0
900901	08	01	14			2	71	3.0	10 38 n	092 40 w	100.0	0.0*	2.0
900901	11	01	18			2	56	5.1	10 18 n	092 53 w	100.0	1.0	1.0
900902	01	03	02	05	02	3	69	8.4	10 21 n	094 39 w	100.0	100.0	50.0
900903	07	01	06			3	71	6.7	11 27 n	099 15 w	100.0	0.0*	1.0
900904	02	03	03			3	55	1.7	11 30 n	101 21 w	100.0	0.0*	2.0
900904	06	02	08	01	01	3	69	7.8	10 47 n	102 06 w	100.0	25.0	20.0
900904	07	01	10	02	02	3	77	0.0	10 40 n	102 13 w	100.0	2.0	2.0
900904	07	04	12	02	02	2	56	4.0	10 36 n	102 17 w	100.0	42.0	34.0
900909	01	03	01			4	77	3.6	05 00 n	115 01 w	100.0	0.0*	10.0
900909	05	13	06			4	55	0.3	04 58 n	116 29 w	100.0	0.0*	5.0
900910	01	01	01			4	56	2.6	04 48 n	117 06 w	100.0	0.0*	2.0
900911	05	01	07	06	03	3	71	7.1	03 53 n	113 08 w	100.0	0.0*	1.0
900912	02	04	01			3	56	7.9	03 31 n	111 29 w	100.0	0.0*	22.0
900912	05	05	07			4	71	6.4	03 16 n	110 33 w	100.0	0.0*	2.0
900912	05	06	08			4	77	1.0	03 13 n	110 27 w	100.0	1.0	1.0
900913	01	04	01	10	01	5	55	10.4	01 50 n	110 08 w	100.0	0.0*	2.0
900914	02	03	03	12	12	4	69	1.4	01 08 s	110 00 w	100.0	0.0*	1.0
900915	06	01	04	12	12	5	67	1.3	02 20 s	108 53 w	100.0	0.0*	2.0
900915	08	01	05	07	02	5	56	2.3	02 07 s	108 23 w	100.0	0.0*	2.0

Table 3. (continued)

Sightings by Species

species: UNIDENTIFIED DOLPHIN species code: 77

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900916	01	01	01			4	56	2.5	01 15 s	106 52 w	100.0	0.0*	20.0
900916	03	04	02			3	56	6.0	00 52 s	106 18 w	100.0	0.0*	10.0
900916	05	09	06			3	77	0.4	00 27 s	105 35 w	100.0	1.0	1.0
900918	03	04	01			4	71	0.0	02 05 n	101 18 w	100.0	0.0*	1.0
900919	02	13	02	12	12	4	71	6.0	03 40 n	098 45 w	100.0	0.0*	10.0
900919	02	14	03	12	12	4	56	0.4	03 46 n	098 40 w	100.0	0.0*	4.0
900919	03	07	05			4	71	4.0	04 11 n	098 17 w	100.0	0.0*	15.0
900919	04	02	06			4	56	2.7	04 24 n	098 09 w	100.0	0.0*	15.0
900920	01	02	01			4	71	0.6	05 05 n	096 15 w	100.0	0.0*	2.0
900922	03	02	03	06	02	4	71	2.2	01 17 n	091 23 w	100.0	65.0	50.0
900923	03	03	06	12	12	5	67	7.7	01 23 n	088 44 w	100.0	0.0*	10.0
900923	05	06	11			4	69	0.3	01 24 n	087 58 w	100.0	110.0	70.0
900924	05	01	03			4	71	1.4	01 24 n	085 28 w	10.0	8.0	8.0
900924	07	04	04			4	77	9.4	01 31 n	084 48 w	100.0	1.0	1.0
900925	02	01	03			4	67	0.1	03 44 n	084 42 w	100.0	0.0*	8.0
900925	10	01	11			4	69	10.3	04 43 n	084 38 w	100.0	0.0*	1.0
900925	10	04	12			3	69	0.4	04 52 n	084 37 w	100.0	3.0	3.0
900926	05	04	04			4	55	0.4	05 30 n	081 58 w	100.0	0.0*	3.0
900927	01	01	02			3	71	8.9	07 20 n	082 06 w	100.0	0.0*	10.0
900927	03	01	04			3	77	0.3	07 24 n	082 08 w	100.0	5.0	5.0
900927	06	01	06			4	55	6.4	07 30 n	082 21 w	100.0	0.0*	3.0
900928	01	05	04			3	55	2.3	08 09 n	083 33 w	100.0	0.0*	4.0
900928	04	03	08			2	77	9.2	08 18 n	083 51 w	100.0	1.0	1.0
901005	01	03	01			4	01	8.5	07 56 n	084 32 w	100.0	0.0*	12.0
901005	04	02	04			3	76	0.8	07 17 n	084 23 w	100.0	1.0	1.0
901007	02	04	01	07	01	5	76	2.8	03 01 n	081 25 w	100.0	7.0	5.0
901009			03	09	01	6	04	0.5	06 46 n	085 57 w	100.0	0.0*	10.0
901010	01	04	01	04	02	4	07	0.7	09 19 n	086 42 w	100.0	20.0	1.0
901011	01	02	01	07	03	4	74	1.0	08 22 n	089 18 w	100.0	1.0	1.0
901011	04	04	03			5	73	0.0	07 39 n	089 37 w	100.0	9.0	7.0
901012			05	01	02	5	73	0.1	05 14 n	090 56 w	100.0	3.0	3.0
901012	07	04	04	01	02	5	07	5.3	05 13 n	090 54 w	100.0	4.0	1.0
901013	01	02	01	05	03	3	76	0.8	04 20 n	092 30 w	100.0	1.0	1.0
901013	02	02	04			4	07	7.7	04 30 n	092 54 w	100.0	1.0	1.0
901013	05	10	09			3	07	0.0	05 06 n	093 55 w	100.0	25.0	25.0
901014	01	04	02	02	03	4	73	0.0	06 21 n	092 27 w	3.7	95.0	68.0
901015	03	01	04	02	03	3	76	3.0	08 50 n	090 14 w	100.0	3.0	3.0
901015	09	02	10	07	02	2	01	9.1	09 48 n	089 13 w	100.0	35.0	25.0
901016	05	01	03	10	02	3	73	11.9	11 26 n	088 58 w	100.0	0.0*	5.0
901018	02	02	01			5	07	0.7	09 31 n	093 46 w	100.0	8.0	6.0
901020	01	01	01			5	73	0.7	07 07 n	098 46 w	100.0	0.0*	10.0
901020	04	03	03	11	02	5	73	11.1	06 51 n	099 51 w	100.0	0.0*	100.0
901022	02	06	03			5	73	1.2	10 16 n	096 23 w	100.0	43.0	22.0
901022	03	03	04	03	01	5	22	4.6	10 20 n	096 17 w	100.0	3.0	2.0

Table 3. (continued)

Sightings by Species

species: UNIDENTIFIED DOLPHIN species code: 77

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
				horz.	vert.							best	low
yrmody			number			number	by	dist.(km)	deg min	deg min	(% of school)		
901023	03	03	02	02	01	4	76	3.3	11 44 n	093 46 w	100.0	8.0	5.0
901024	01	02	02	02	03	2	73	0.9	13 39 n	091 15 w	100.0	49.0	27.0
901028	04	01	05	11	02	2	74	4.1	13 44 n	091 30 w	100.0	15.0	12.0
901030	03	01	03	08	01	2	22	0.6	15 46 n	098 46 w	100.0	2.0	2.0
901030	03	01	04	08	01	2	22	2.1	15 47 n	098 47 w	100.0	2.0	2.0
901030	03	02	05	09	01	2	73	0.8	15 48 n	098 55 w	100.0	1.0	1.0
901030	07	01	10	11	02	3	22	1.3	15 53 n	099 21 w	3.3	51.0	38.0
901030	09	02	11	11	03	3	74	6.1	15 55 n	099 29 w	100.0	0.0*	3.0
901031	01	01	01	06	03	2	22	1.4	16 09 n	101 09 w	100.0	1.0	1.0
901031	12	01	12	11	02	2	22	4.5	16 24 n	102 26 w	100.0	2.0	2.0
901031	13	01	15	11	03	2	01	4.5	16 25 n	102 31 w	100.0	20.0	12.0
901101	01	02	02	03	03	2	74	5.9	16 28 n	104 23 w	100.0	6.0	6.0
901101	08	05	15	09	03	2	73	8.8	17 56 n	104 17 w	100.0	0.0*	5.0
901108	01	06	01	08	02	5	73	0.5	17 51 n	105 14 w	100.0	0.0*	2.0
901108	03	02	03	02	02	4	74	1.8	17 06 n	105 45 w	100.0	20.0	10.0
901109	01	05	01	10	02	4	22	0.1	15 16 n	105 53 w	1.3	26.0	22.0
901109	02	02	02	10	02	4	76	0.6	15 03 n	105 54 w	100.0	1.0	1.0
901109	03	10	03	01	01	4	76	3.8	14 29 n	105 58 w	100.0	10.0	8.0
901110	04	03	06	11	01	3	01	1.1	11 44 n	106 39 w	100.0	20.0	8.0
901110	07	01	10	01	02	3	01	2.7	11 24 n	107 04 w	100.0	25.0	18.0
901110	08	01	11	01	02	3	76	9.5	11 19 n	107 05 w	100.0	100.0	100.0
901111	02	03	03	07	02	1	01	3.9	10 22 n	108 57 w	100.0	20.0	12.0
901112	01	04	03	08	02	3	07	5.4	09 17 n	111 05 w	100.0	1.0	1.0
901116	01	01	01			4	01	3.1	00 36 n	117 07 w	100.0	20.0	8.0
901116	02	02	02	03	03	4	01	2.2	00 41 n	117 06 w	100.0	12.0	6.0
901118	03	03	04	12	12	3	73	5.3	08 29 n	116 19 w	100.0	0.0*	1.0
901119	08	01	07	03	01	1	74	5.9	10 17 n	114 06 w	100.0	0.0*	1.0
901120	05	06	03	05	01	4	76	5.4	11 21 n	110 52 w	100.0	2.0	2.0
901120	07	02	05			4	74	3.8	11 32 n	110 43 w	15.0	115.0	70.0
901121	03	02	04	11	02	3	76	0.1	12 36 n	114 12 w	9.0	16.0	12.0
901122	04	04	06	05	02	4	22	6.2	13 45 n	114 17 w	100.0	1.0	1.0
901123	04	08	06	11	03	3	73	0.8	14 41 n	112 29 w	100.0	0.0*	1.0
901125	02	03	01	01	03	5	22	1.4	16 18 n	115 01 w	100.0	0.0*	1.0
901126	01	02	04	01	03	3	76	4.7	17 00 n	111 30 w	100.0	1.0	1.0
901126	03	02	07	02	02	2	22	2.0	17 05 n	111 12 w	100.0	2.0	2.0
901126	03	02	08	02	02	2	73	0.0	17 05 n	111 12 w	100.0	6.0	5.0
901126	11	01	16	05	03	1	22	3.2	17 09 n	110 17 w	100.0	20.0	5.0
901127	01	01	01			1	73	2.2	17 33 n	111 45 w	100.0	1.0	1.0
901127	02	01	02	06	03	2	73	4.3	17 31 n	111 47 w	100.0	10.0	5.0
901127	03	01	03	06	02	2	73	2.1	17 30 n	111 58 w	100.0	1.0	1.0
901127	04	03	04	06	02	3	73	8.3	17 29 n	112 04 w	100.0	2.0	2.0
901201	02	05	03	09	02	4	73	7.3	20 59 n	110 57 w	100.0	0.0*	3.0
901203	06	01	03	06	02	3	22	1.1	26 10 n	113 54 w	100.0	32.0	12.0
901205	05	02	06	06	02	1	22	8.5	30 25 n	116 14 w	100.0	1.0	1.0

Table 3. (continued)

Sightings by Species

species: UNIDENTIFIED DOLPHIN species code: 77

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
901205	05	03	07	06	02	1	22	0.5	30 26 n	116 14 w	100.0	1.0	1.0
901205	05	03	08	06	02	1	07	2.3	30 28 n	116 14 w	100.0	1.0	1.0

Table 3. (continued)

Sightings by Species

species: UNIDENTIFIED SMALL WHALE species code: 78

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
				horz.	vert.								
yrmody			number			number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900810	03	01	03	10	01	3	69	0.8	06 02 n	122 38 w	100.0	1.0	1.0
900814	02	15	03	07	01	5	69	0.6	01 05 n	112 56 w	100.0	2.0	2.0
900815	03	12	03			4	67	1.0	00 55 n	109 15 w	100.0	1.0	1.0
900824			01			3	67	5.9	12 06 n	097 43 w	100.0	1.0	1.0
900901	06	01	09	12	12	1	67	2.1	10 52 n	092 33 w	100.0	1.0	1.0
900902			08	11	01	1	04	0.2	10 19 n	095 50 w	100.0	12.0	10.0
900911			06	10	02	4	67	0.2	03 49 n	113 09 w	100.0	25.0	20.0
900928	01	04	02	04	02	3	69	3.4	08 04 n	083 30 w	100.0	0.0*	1.0
901014	01	04	01	02	03	4	73	0.0	06 21 n	092 27 w	100.0	4.0	3.0
901028			01			2	76	0.3	13 53 n	090 55 w	100.0	2.0	2.0
901101	01	01	01			1	74	3.8	16 25 n	104 23 w	100.0	2.0	3.0
901101	03	02	07	03	02	1	76	5.1	16 38 n	104 21 w	100.0	1.0	1.0
901122	02	04	03	02	02	3	76	0.1	13 32 n	115 01 w	100.0	2.0	2.0

Table 3. (continued)

Sightings by Species

species: UNIDENTIFIED LARGE WHALE species code: 79

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900805	01	05	01			4	69	0.4	19 22 n	118 42 w	100.0	1.0	1.0
900805	04	01	06	01	03	4	71	10.1	18 28 n	120 19 w	100.0	1.0	1.0
900812	02	05	01	07	02	5	71	4.5	00 56 n	118 00 w	100.0	1.0	1.0
900814	01	02	01	12	03	4	69	0.0	00 52 n	112 48 w	100.0	5.0	5.0
900816	05	05	04	06	02	4	71	0.5	00 57 n	106 41 w	100.0	1.0	1.0
900817	02	02	04			4	56	1.0	04 05 n	105 47 w	100.0	1.0	1.0
900823	04	05	05			2	77	5.5	12 15 n	100 00 w	100.0	1.0	1.0
900905	06	01	04			4	69	5.9	09 01 n	104 15 w	100.0	3.0	2.0
900912	03	08	03	12	12	3	56	1.8	03 16 n	111 01 w	100.0	1.0	1.0
900913	03	01	02	12	12	5	56	0.5	01 39 n	110 03 w	100.0	1.0	1.0
900921	03	19	08	05	03	5	71	1.0	02 19 n	093 04 w	100.0	1.0	1.0
900923	01	02	04			4	55	2.5	01 19 n	089 34 w	100.0	1.0	1.0
900928	04	02	07			2	69	2.5	08 16 n	083 50 w	100.0	1.0	1.0
901009			05	07	02	5	04	1.2	07 06 n	086 00 w	100.0	1.0	1.0
901013	04	04	07	12	12	4	07	3.9	04 41 n	093 22 w	100.0	1.0	1.0
901023	05	04	04	06	01	3	01	5.3	12 05 n	093 12 w	100.0	1.0	1.0
901124	01	02	01			3	01	5.1	15 02 n	114 22 w	100.0	1.0	1.0
901201	01	16	01	07	01	5	22	3.9	20 37 n	110 36 w	100.0	1.0	1.0
901201	03	01	05	09	03	4	76	2.5	21 05 n	111 01 w	100.0	1.0	1.0
901205	01	02	01	03	03	3	73	10.9	29 47 n	116 22 w	100.0	1.0	1.0

Table 3. (continued)

Sightings by Species

species: UNIDENTIFIED CETACEAN species code: 96

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900822	04	06	06	06	01	3	56	0.7	12 58 n	102 38 w	100.0	0.0*	1.0
900904	03	01	04	08	02	3	55	0.1	11 24 n	101 24 w	100.0	1.0	1.0
900906	02	08	02			5	71	1.0	07 05 n	106 38 w	100.0	0.0*	1.0
900915	05	02	03	12	12	5	71	1.9	02 22 s	108 55 w	100.0	3.0	3.0
900928	04	04	09	12	12	2	55	0.3	08 22 n	083 53 w	100.0	1.0	1.0
901119	04	01	04	02	02	2	76	6.9	10 02 n	114 39 w	100.0	3.0	3.0
901126	02	03	06	02	02	2	22	5.0	17 03 n	111 16 w	100.0	2.0	2.0

Table 3. (continued)

Sightings by Species

species: UNIDENTIFIED WHALE species code: 98

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900812	02	10	02	07	03	4	67	2.5	00 57 n	117 41 w	100.0	1.0	1.0
900813	02	04	02	11	01	4	77	0.7	00 55 n	116 24 w	100.0	0.0*	1.0
900901	04	01	06	09	01	1	77	5.9	11 04 n	092 25 w	100.0	1.0	1.0
900906	01	05	01			5	56	4.8	07 33 n	106 00 w	100.0	1.0	1.0
900909	04	02	03	12	12	4	56	7.0	05 04 n	115 40 w	100.0	1.0	1.0
900910	03	01	02	11	02	4	77	2.1	04 43 n	116 59 w	100.0	2.0	2.0
900910	06	08	05			4	71	0.4	04 27 n	115 55 w	100.0	1.0	1.0
900914	06	01	04	03	02	4	77	2.5	01 55 s	110 00 w	100.0	1.0	1.0
900915	04	03	02			4	77	3.2	02 26 s	109 06 w	100.0	1.0	1.0
900918	04	01	03	07	01	4	77	10.3	02 11 n	101 12 w	100.0	1.0	1.0
900919	01	03	01			4	77	0.7	03 06 n	099 25 w	100.0	6.0	6.0
900920			02			4	55	0.0	04 55 n	096 04 w	100.0	1.0	1.0
900920	03	04	03			4	77	1.4	04 43 n	095 53 w	100.0	2.0	2.0
900921	03	12	05	05	01	4	77	2.3	02 36 n	093 28 w	100.0	1.0	1.0
900923	01	01	01			4	77	0.7	01 20 n	089 41 w	100.0	1.0	1.0
900923	03	04	08	06	01	5	56	1.2	01 24 n	088 34 w	100.0	1.0	1.0
900923	04	01	09	06	01	4	77	0.9	01 24 n	088 25 w	100.0	1.0	1.0
900926	03	05	02	12	02	4	77	2.0	05 30 n	082 44 w	100.0	2.0	2.0
901111	01	02	01			2	22	2.2	10 30 n	108 40 w	100.0	3.0	3.0

Table 3. (continued)

Sightings by Species

species: SEI/BRYDE'S WHALE (BALAENOPTERA EDENI/BOREALIS) species code: 99

date	series	leg	sight	sun position		beauf.	detected	perp.	latitude	longitude	proportion	mean school size est	
yrmody			number	horz.	vert.	number	by	dist.(km)	deg min	deg min	(% of school)	best	low
900804	03	07	06	03	02	4	67	0.3	20 48 n	117 34 w	100.0	2.0	1.0
900817			03			4	04	0.2	03 59 n	105 48 w	100.0	1.0	1.0
900823	04	02	04			3	55	0.1	12 19 n	100 11 w	100.0	1.0	1.0
900913	05	02	03	03	02	4	69	2.1	01 11 n	110 00 w	100.0	1.0	1.0
901115	05	05	02			4	01	2.0	00 20 n	115 15 w	100.0	2.0	2.0
901121	04	01	05	11	03	3	74	0.6	12 38 n	114 17 w	100.0	1.0	1.0
901126			15	05	03	1	99	0.0	17 09 n	110 23 w	33.0	3.0	3.0
901126	01	02	02	01	03	3	01	2.6	17 00 n	111 34 w	100.0	1.0	1.0

Table 4. Marine mammal school size estimates for each observer, classified by species codes, for all sightings encountered in the eastern tropical Pacific during July - September (Part A) and October - December (Part B) of 1990.

A: Sightings encountered July 28 through September 29, 1990.

		obs 55		obs 56		obs 67		obs 69		obs 71		obs 77	
date	sight no.	best est.	pct	best est.	pct	best est.	pct	best est.	pct	best est.	pct	best est.	pct
species 2: OFFSHORE SPOTTED DOLPHIN													
900805	04			525	100	140	100	140	100				
900806	03			80	60	115	60	110	45				
900807	02			150	5	130	10	70	5				
900810	02	50	100	250	100	115	100	70	100	45	100	31	100
900811	01	50	99										
900819	02	60	100	40	100	35	100	40	100				
900822	01							210	70				
900822	04	400	70							400	70	85	70
900822	05			300	100	275	100	300	100				
900823	02			180	60	80	50	60	80				
900824	03			75	100	17	100	18	100				
900824	09			150	40	90	50	60	33				
900825	01	700	20							300	35		
900825	07									650	50		
900901	01	70	85							30	80	25	88
900901	17			50	100					15	100	9	100
900902	01			1100	99	750	98	280	93				
900902	05	285	95	275	98	295	98	180	97	80	98	100	90
900902	07	110	55	130	80	110	50			55	65	35	45
900902	09	145	100	500	100	230	100	375	100	120	100	85	100
900903	02			10	100	10	100	5	100				
900903	03			350	40	120	52	180	60				
900903	04	475	65	350	85	235	60	230	75	260	50	90	45
900903	05	410	70	600	49	230	50	320	55	210	60	120	45
900904	01			75	100	85	100	45	100				
900904	02	200	98										
900904	05	10	100							8	100	3	100
900904	06	155	100							45	100	80	100
900905	01			70	100	60	100	22	100				
900908	01	300	80							80	85	200	75
900909	02			150	100	220	100	45	100				
900910	04	50	100							35	100	40	100
900911	03	220	10							85	10	160	25
900911	05	150	100	150	100	200	100	240	100	170	100	100	100
900912	04	210	40							55	40	45	30
900917	03			250	100	120	100	70	100				
900917	04			400	100	310	100	310	100				
900922	01	960	85	1100	92	1650	80	670	80	300	80	350	67
900923	10	420	95							100	95	100	90
900927	05			2500	100	1500	100	3200	100				
900927	07	230	100							100	100	150	100
species 3: SPINNER DOLPHIN													
900811	01	50	1										

Table 4A. (continued)

		obs 55		obs 56		obs 67		obs 69		obs 71		obs 77	
date	sight no.	best est.	pct	best est.	pct	best est.	pct	best est.	pct	best est.	pct	best est.	pct
species 6: COASTAL SPOTTED DOLPHIN													
900831	01	10	100	15	100	12	100	5	100				
900927	03	21	100							12	100	25	100
species 10: EASTERN SPINNER DOLPHIN													
900822	01							210	30				
900822	04	400	20							400	15	85	12
900823	02			180	40	80	50	60	20				
900824	02			375	100	120	100	230	100				
900824	05	170	100							125	100	100	100
900824	09			150	60	90	50	60	67				
900825	01	700	80							300	65		
900825	07									650	50		
900902	01			1100	1	750	2	280	7				
900902	07	110	45	130	20	110	50			55	35	35	55
900903	03			350	55	120	45	180	38				
900903	04	475	34	350	14	235	38	230	23	260	49	90	45
900903	05	410	29	600	49	230	48	320	43	210	39	120	45
species 11: WHITEBELLY SPINNER DOLPHIN													
900804	02	85	10							70	5		
900806	03			80	40	115	40	110	55				
900807	02			150	95	130	90	70	95				
900908	01	300	20							80	15	200	25
900911	03	220	90							85	90	160	75
900912	04	210	60							55	60	45	70
900922	01	960	15	1100	8	1650	20	670	20	300	20	350	33
species 13: STRIPED DOLPHIN													
900803	01	25	100							25	100	30	100
900805	07	40	100							14	100	13	100
900806	04			15	100	12	100	16	100				
900806	05			10	100	15	100	25	100				
900810	04			195	100	150	100	140	100				
900810	08			175	100	120	100	110	100				
900821	01	40	100	100	100	30	100	80	100	33	100	30	100
900821	02	60	100	110	100	45	100	43	100	33	100	45	100
900901	15			300	100	210	100	230	100				
900901	16			80	100	50	100	60	100				
900901	20	50	100							40	100	25	100
900902	03	65	100	120	100	115	100	72	100	50	100	60	100
900902	04	40	100	105	100	38	100	30	100	25	100	20	100
900902	06			75	100	65	100	40	100				
900902	10	50	100	75	100	65	100	125	100	38	100	25	100
900904	07			60	100	37	100	45	100				
900904	09	26	100	55	100	32	100	30	100	22	100	25	100
900905	03	15	100							13	100	8	100
900905	05	40	100							29	100	80	100
900909	04			125	100	255	100	95	100				
900911	02			160	100	120	100	60	100				
900912	02	30	100							19	100	20	100

Table 4A. (continued)

		obs 55		obs 56		obs 67		obs 69		obs 71		obs 77	
date	sight no.	best est.	pct	best est.	pct	best est.	pct	best est.	pct	best est.	pct	best est.	pct
species 13: STRIPED DOLPHIN													
900916	03	42	100							23	100	30	100
900919	04			60	100	55	100	18	100				
900921	02									40	100	40	100
900922	05			40	100	30	100						
900925	02			75	100	65	100	22	100				
900925	04	47	100							50	100	100	100
900925	07			50	100	35	100	30	100				
900925	08	35	100							18	100	45	100
900925	13	40	100							25	100	45	100
900926	05	55	100							30	100	50	100
species 15: ROUGH-TOOTHED DOLPHIN													
900816	01									40	75	21	40
900817	05			10	100	20	100	10	100				
900822	04	400	5							400	10	85	6
900822	07	5	100							4	100	4	100
900824	06	6	100							4	100	4	100
900824	07	10	100							9	100	6	100
900825	09			15	100	8	100	6	100	6	100		
900901	08			10	100	9	100						
900901	13	7	100										
900902	12			8	100								
900916	04	35	100	80	100	125	100	32	100	55	100	45	100
900917	05	34	2										
900925	10	8	100										
species 17: "SHORT-SNOUTED WHITEBELLY"													
900804	02	85	90							70	95		
900901	04	460	100	700	100	520	100	450	100	170	100	100	100
900901	05	570	100	1200	100	530	100	900	100	240	100	140	100
species 18: BOTTLENOSED DOLPHIN													
900804	03			25	100	20	100	14	100				
900822	04	400	5							400	5	85	12
900825	04	7	100							10	100	12	100
900831	03	8	100							10	100	7	100
900831	04											9	88
900901	01	70	15							30	20	25	12
900901	12							5	100				
900901	19					25	100	9	100				
900902	05	285	5	275	2	295	2	180	3	80	2	100	10
900903	03			350	5	120	3	180	2				
900903	04	475	1	350	1	235	2	230	2	260	1	90	10
900903	05	410	1	600	2	230	2	320	2	210	1	120	10
900904	02	200	2										
900912	06	7	100							2	100		
900917	05	34	18										
900923	10	420	5							100	5	100	10
900927	01	27	20							15	10	35	10
900928	03	26	20										

Table 4A. (continued)

	date	sight no.	obs 55 best est.	obs 55 pct	obs 56 best est.	obs 56 pct	obs 67 best est.	obs 67 pct	obs 69 best est.	obs 69 pct	obs 71 best est.	obs 71 pct	obs 77 best est.	obs 77 pct
species	21: RISSO'S DOLPHIN													
	900912	05	24	100	55	100	35	100	42	100	35	100	17	100
	900914	02	10	100							6	100	5	100
	900926	01			12	100	15	100	5	100				
species	26: FRASER'S DOLPHIN													
	900810	01			200	100	110	100	120	100				
	900910	03	300	100							110	100	200	100
	900924	02	360	60							100	60	350	70
species	31: MELON-HEADED WHALE													
	900924	02	360	40							100	40	350	30
species	32: PYGMY KILLER WHALE													
	900823	03			8	100	14	100	10	100				
	900824	08	23	100							11	100	9	100
species	33: FALSE KILLER WHALE													
	900923	05	10	100							12	100		
species	36: SHORT-FINNED PILOT WHALE													
	900813	01			30	100	16	100	11	100				
	900813	04	16	100							20	100	10	100
	900815	01			15	100								
	900816	01									40	25	21	60
	900818	01							9	100				
	900915	01			20	100	10	100	18	100				
	900917	05	34	80										
	900927	01	27	80							15	90	35	90
	900928	03	26	80										
	900928	05	30	100	30	100	33	100	28	100	21	100	37	100
	900928	06			20	100								
species	37: KILLER WHALE													
	900901	03	1	100										
	900901	07			5	100	6	100	3	100				
	900924	03									8	90		
	900926	03									1	100		
species	46: SPERM WHALE													
	900806	02	1	100										
	900925	01									6	100		
	900925	06									12	100		
	900925	14									15	100		
species	48: DWARF SPERM WHALE													
	900805	02	1	100										
	900923	03	2	100										

Table 4A. (continued)

	date	sight no.	obs 55 best est.	obs 55 pct	obs 56 best est.	obs 56 pct	obs 67 best est.	obs 67 pct	obs 69 best est.	obs 69 pct	obs 71 best est.	obs 71 pct	obs 77 best est.	obs 77 pct
species	49: BEAKED WHALE													
	900824	10					3	100						
	900825	02			2	100								
	900902	11			3	100	3	100						
	900921	07					1	100						
	900928	01			1	100								
species	51: UNID. MESOPLODONT													
	900810	05			4	100								
	900813	03					2	100	2	100				
	900820	01							2	100				
	900903	01			3	100	4	100						
	900908	02	1	100										
	900921	01									1	100		
	900926	06					1	100						
species	61: CUVIER'S BEAKED WHALE													
	900909	05									2	100		
	900917	01	1	100										
	900918	02	2	100							3	100	4	100
	900921	06	2	100							2	100	2	100
	900925	05	2	100							2	100	2	100
species	70: RORQUAL													
	900805	05	1	100										
	900810	06							1	100				
	900814	02			1	100								
	900816	02			1	100								
	900816	03							2	100				
	900816	05			1	100								
	900823	06											1	100
	900904	11											1	100
	900911	04									1	100		
	900914	01	1	100										
	900917	02	1	100										
	900917	06									2	100		
	900921	03					1	100						
	900921	04							1	100				
	900922	02	2	100										
	900923	07							1	100				
species	72: BRYDE'S WHALE													
	900924	01					1	100						
species	77: UNIDENTIFIED DOLPHIN													
	900805	03					3	100						
	900819	01	1	100										
	900823	07							1	100				
	900824	04			6	100			5	100				
	900825	03							1	100				
	900825	06											1	100

Table 4A. (continued)

		obs 55		obs 56		obs 67		obs 69		obs 71		obs 77	
date	sight no.	best est.	pct	best est.	pct	best est.	pct	best est.	pct	best est.	pct	best est.	pct
species 77: UNIDENTIFIED DOLPHIN													
900831	02											1	100
900831	04											9	12
900831	05			2500	100			2100	100				
900901	02									1	100		
900901	10							100	100				
900901	18			1	100								
900902	02							100	100				
900904	08							25	100				
900904	10	2	100									2	100
900904	12			70	100			15	100				
900912	08											1	100
900916	06											1	100
900922	03	70	100							60	100		
900923	11	200	100									20	100
900924	03									8	10		
900924	04											1	100
900925	12							3	100				
900927	04											5	100
900928	08											1	100
species 78: UNIDENTIFIED SMALL WHALE													
900810	03							1	100				
900814	03							2	100				
900815	03					1	100						
900901	09					1	100						
species 79: UNIDENTIFIED LARGE WHALE													
900805	01							1	100				
900805	06									1	100		
900812	01									1	100		
900814	01							5	100				
900816	04									1	100		
900817	04			1	100								
900823	05											1	100
900905	04							3	100				
900912	03			1	100								
900913	02			1	100								
900921	08									1	100		
900923	04	1	100										
900928	07							1	100				
species 96: UNIDENTIFIED CETACEAN													
900904	04	1	100										
900915	03									3	100		
900928	09	1	100										
species 98: UNIDENTIFIED WHALE													
900812	02					1	100						
900901	06											1	100
900906	01			1	100								

Table 4A. (continued)

		obs 55		obs 56		obs 67		obs 69		obs 71		obs 77	
date	sight no.	best est.	pct	best est.	pct	best est.	pct	best est.	pct	best est.	pct	best est.	pct
species 98: UNIDENTIFIED WHALE													
900909	03			1	100								
900910	02											2	100
900910	05									1	100		
900914	04											1	100
900915	02											1	100
900918	03											1	100
900919	01											6	100
900920	03											2	100
900921	05											1	100
900923	01									1	100	1	100
900923	08			1	100								
900923	09											1	100
900926	02											2	100
species 99: SEI/BRYDE'S WHALE													
900804	06					2	100						
900823	04	1	100										
900913	03							1	100				

Table 4B. Sightings encountered October 4 through December 6, 1990.

	date	sight no.	obs 1 best est.	obs 1 pct	obs 7 best est.	obs 7 pct	obs 22 best est.	obs 22 pct	obs 73 best est.	obs 73 pct	obs 74 best est.	obs 74 pct	obs 76 best est.	obs 76 pct
species	2: OFFSHORE SPOTTED DOLPHIN													
	901018	04			15	100	12	100	10	100				
	901018	05			65	80	70	85	80	75				
	901021	02									100	93	53	95
	901022	01	25	100			2	100					30	100
	901022	02											40	100
	901022	05	9	100							30	100		
	901022	07									25	100		
	901024	01			8	100	7	100	6	100				
	901024	03			20	100	30	100	22	100				
	901028	03	45	100	75	100	46	100	115	100	90	100	150	100
	901028	06	25	100										
	901028	07	23	99										
	901028	10			4	100								
	901030	07			50	100	20	100			47	100		
	901030	08	105	99	180	90	95	96			135	97	400	99
	901030	10			55	99					32	91		
	901031	03	18	100							13	100	13	100
	901031	04	8	100									8	100
	901031	05	50	5	140	1	85	4	90	10	80	10	75	20
	901031	11			16	100	10	100	20	100				
	901031	14	30	10							75	25	60	30
	901108	02			220	10	180	19	200	19				
	901108	05	150	20							180	10	300	15
	901108	06			180	98			80	95				
	901109	05	65	15							300	5		
	901110	01	230	10							420	12	380	30
	901110	03	85	7							300	20	250	10
	901110	05			45	100	25	100	22	100				
	901110	07	65	3									440	25
	901111	02	32	5	50	50	37	38	40	30	120	8	120	15
	901112	04	50	2									150	40
	901116	05	25	100							15	100	45	100
	901117	01	25	100							5	100	40	100
	901119	05	37	75	120	75	80	65	110	60	170	72	250	60
	901119	09			150	35	95	75	200	60				
	901120	01	45	10							90	40	160	30
	901120	05									80	80	150	90
	901122	02			130	10	95	30	175	25				
	901123	02	85	22							55	18	85	45
	901123	04	65	5	70	10	42	40	80	35	50	20		
	901126	03	22	100							25	100	35	100
species	3: SPINNER DOLPHIN													
	901110	14	16	100										
	901112	04	50	98									150	60

Table 4B. (continued)

	date	sight no.	obs 1 best est.	obs 1 pct	obs 7 best est.	obs 7 pct	obs 22 best est.	obs 22 pct	obs 73 best est.	obs 73 pct	obs 74 best est.	obs 74 pct	obs 76 best est.	obs 76 pct
species	5: COMMON DOLPHIN													
	901202	03			50	100	50	100	35	100				
	901203	01			230	100	260	100	275	100				
	901203	02			150	100	190	100	300	100				
	901203	04	150	100							200	100		
	901204	01	85	100							70	100	225	100
	901205	03	250	100	320	100	1050	100	700	100	400	100	650	100
	901205	05	170	100	220	100	650	100	265	100	320	100	340	100
species	10: EASTERN SPINNER DOLPHIN													
	901030	08	105	1	180	10	95	4			135	3	400	1
	901031	05	50	95	140	99	85	96	90	90	80	90	75	80
	901031	10	27	100	25	100	23	100	23	100	16	100	40	100
	901031	14	30	90							75	75	60	70
	901101	08	16	100										
	901108	02			220	89	180	80	200	80				
	901108	05	150	80							180	90	300	85
	901108	06			180	2			80	5				
	901109	01					25	96						
	901109	04			25	100	29	100						
	901109	05	65	85							300	95		
	901110	01	230	90							420	88	380	70
	901110	03	85	93							300	80	250	90
	901110	07	65	97									440	75
	901111	02	32	95	50	50	37	62	40	70	120	92	120	85
	901119	05	37	25	120	25	80	35	110	40	170	28	250	40
	901120	01	45	90							90	60	160	70
	901121	01			80	100	47	100	110	100				
	901122	02			130	90	95	70	175	75				
	901123	02	85	78							55	82	85	55
	901123	04	65	95	70	90	42	60	80	65	50	80		
	901126	09	35	100	50	100	64	100	90	100	45	100	40	100
species	11: WHITEBELLY SPINNER DOLPHIN													
	901119	08	16	100							30	100	30	100
	901119	09			150	65	95	25	200	40				
species	13: STRIPED DOLPHIN													
	901006	03	35	100							45	100	75	100
	901008	02			30	100	30	100	15	100				
	901008	03			15	100	20	100	23	100				
	901008	04	5	100									7	100
	901013	02	12	100							30	100	20	100
	901013	03			75	100	75	100	65	100				
	901013	08			45	100	27	100	50	100				
	901014	07	60	100	50	100	90	100	55	100	70	100	60	100
	901014	08	17	100							30	100	8	100
	901015	02	45	100							55	100	30	100
	901015	03	14	100							35	100	12	100
	901015	09	18	100							25	100	15	100
	901015	11			25	100	23	100	25	100				

Table 4B. (continued)

		obs 1		obs 7		obs 22		obs 73		obs 74		obs 76	
date	sight no.	best est.	pct	best est.	pct	best est.	pct	best est.	pct	best est.	pct	best est.	pct
species 13: STRIPED DOLPHIN													
901017	02			18	100	16	100	23	100				
901017	03	6	100							20	100	8	100
901017	06	8	100							30	100	10	100
901021	07	17	100							25	100	35	100
901021	08	15	100							10	100	20	100
901021	09							2	100				
901022	06	17	100							25	100	20	100
901023	03			55	100	43	100	55	100				
901101	05	25	100							30	100	30	100
901101	09			35	100	22	100	22	100				
901101	14	17	100							28	100	25	100
901115	01	40	100							40	100	40	100
901116	04	15	100							30	100	20	100
901118	05	27	100	80	100	25	100	60	100	45	100	45	100
901118	07	25	100							40	100	20	100
901118	08	17	100									20	100
901119	02			65	100	28	100	60	100				
901119	03	20	100							45	100	70	100
901120	04			40	100	54	100	60	100			80	100
901123	01	15	100							15	100	15	100
901124	03			12	100	12	100	15	100				
901126	12	55	100	60	100	63	100	75	100	65	100	55	100
901126	13	50	100							32	100	40	100
901126	14	18	100	12	100	14	100	14	100	14	100	16	100
901127	08	11	100							10	100	10	100
species 15: ROUGH-TOOTHED DOLPHIN													
901010	03	32	98							42	93	57	98
901017	01	30	100							34	100	35	100
901110	08	12	100							18	100	10	100
901118	03	22	70							15	80	20	65
901201	04	6	100							6	100	7	100
species 17: "SHORT-SNOUTED WHITEBELLY"													
901010	04	28	100							38	100	40	100
901011	02	120	100	135	100	95	100	400	100	95	100	135	100
901011	07			220	100	370	100	750	100				
901012	02	50	100							35	100	25	100
901012	03	7	100							9	100	10	100
901014	02					75	99	120	90				
901014	03	125	100							200	100	90	100
901014	05	320	100	950	100	530	100	800	100	580	100	660	100
901014	09	230	100			80	100			270	100	260	100
901016	02	285	100	750	100	570	100	1150	100	560	100	550	100
901017	05			30	100	36	100	45	100				
901126	10			10	100	15	100					18	100
901201	02	16	100	35	100	31	100	30	100	22	100	60	100
901205	09	270	100	300	100	450	100	1350	100	1000	100	1500	100
901205	10			570	100	1080	100	1560	100	2100	100	700	100

Table 4B. (continued)

		obs 1		obs 7		obs 22		obs 73		obs 74		obs 76	
date	sight no.	best est.	pct	best est.	pct	best est.	pct	best est.	pct	best est.	pct	best est.	pct
species 18: BOTTLENOSED DOLPHIN													
901010	03	32	2							42	7	57	2
901011	06			29	70	53	75	55	90				
901014	06	50	100							55	100	38	100
901015	08			80	75	54	79	150	82				
901018	05			65	20	70	15	80	25				
901021	02									100	7	53	5
901021	03	65	40							63	34	82	48
901028	02			3	100	2	100	2	100			3	100
901028	04	36	100										
901028	07	23	1										
901030	02					3	100	7	100	7	100		
901031	13			6	100	5	100	9	100				
901108	02			220	1	180	1	200	1				
901118	03	22	30							15	20	20	35
901121	04	18	98							10	80	20	95
901123	03	2	100							2	100	2	100
901125	02	4	100							3	100	5	100
901125	03			125	100	260	100	175	100				
901126	01									7	100	4	100
901126	05											1	100
901127	05											1	100
901129	01			50	100	11	100	70	100				
901202	01			50	100	48	100	80	100				
901202	04	25	30							15	40	12	33
species 21: RISSO'S DOLPHIN													
901005	03	17	100							12	100	6	100
901006	01	5	100	3	100							3	100
901006	04									1	100	1	100
901101	13	17	100							11	100	9	100
901119	01			18	100	5	100	6	100				
901125	04			10	100	7	100	9	100				
species 32: PYGMY KILLER WHALE													
901031	06			30	100	11	100	18	100				
901031	07	37	100	20	100	20	100	38	100	25	100	33	100
901031	08			18	100	13	100	12	100				
901101	12			30	100	8	100	20	100				
species 36: SHORT-FINNED PILOT WHALE													
901005	02	25	100									5	100
901010	02									10	100		
901011	04	25	100							18	100	13	100
901011	05									7	100	7	100
901011	06			29	30	53	25	55	10				
901014	04			15	100	9	100	18	100				
901015	08			80	25	54	21	150	18				
901015	12			45	100	16	100	20	100			21	100
901021	03	65	60							63	66	82	52
901021	06	24	100									25	100

Table 4B. (continued)

	date	sight no.	obs 1 best est.	obs 1 pct	obs 7 best est.	obs 7 pct	obs 22 best est.	obs 22 pct	obs 73 best est.	obs 73 pct	obs 74 best est.	obs 74 pct	obs 76 best est.	obs 76 pct
species	36: SHORT-FINNED PILOT WHALE													
	901202	02			18	100	16	100	16	100			13	100
	901202	04	25	70							15	60	12	67
species	37: KILLER WHALE													
	901030	01			1	100	1	100	1	100			1	100
	901110	13			2	100	2	100						
species	46: SPERM WHALE													
	901008	01					1	100	1	100				
	901012	01	1	100	2	100			1	100	1	100	1	100
	901013	05			8	100	7	100	12	100	9	100	7	100
	901013	06											4	100
	901122	01									1	100		
	901204	02					2	100	2	100			1	100
	901204	03	1	100							1	100	1	100
species	48: DWARF SPERM WHALE													
	901023	05	1	100										
	901101	04											1	100
	901118	01							1	100				
	901118	02	2	100										
species	49: BEAKED WHALE													
	901008	05			4	100	3	100						
	901015	07					2	100	4	100				
	901016	04			3	100								
	901016	05			3	100								
	901119	06					1	100	1	100				
	901122	05											1	100
species	51: UNID. MESOPLODONT													
	901016	01											2	100
	901031	09							3	100				
	901101	11									1	100		
	901112	02									1	100		
	901118	06							1	100				
	901126	11									3	100	3	100
	901205	02							1	100				
species	61: CUVIER'S BEAKED WHALE													
	901006	02	1	100							1	100	1	100
	901015	06									2	100		
	901101	06	2	100							2	100	1	100
	901110	12			1	100	1	100						
	901123	05	2	100							2	100	2	100
species	70: RORQUAL													
	901020	02											1	100
	901021	05											1	100
	901023	01											1	100

Table 4B. (continued)

		obs 1		obs 7		obs 22		obs 73		obs 74		obs 76	
date	sight no.	best est.	pct	best est.	pct	best est.	pct	best est.	pct	best est.	pct	best est.	pct
species 70: RORQUAL													
901112	01									1	100	1	100
901116	03									1	100		
901124	02									1	100		
901127	06											1	100
species 72: BRYDE'S WHALE													
901007	02			1	100	1	100	1	100				
901120	02			5	100	7	100	5	100				
species 75: BLUE WHALE													
901018	03	1	100							1	100	1	100
species 77: UNIDENTIFIED DOLPHIN													
901005	04											1	100
901007	01											7	100
901010	01			20	100								
901011	01											1	100
901011	03			10	100			7	100				
901012	04			4	100								
901013	01											1	100
901013	04			1	100								
901013	09							25	100				
901014	02					75	1	120	10				
901015	04											3	100
901015	10	35	100										
901018	01			8	100			8	100				
901022	03			10	100	20	100	100	100				
901022	04					3	100						
901023	02											8	100
901024	02			80	100	21	100	45	100				
901028	05									15	100		
901030	03					2	100						
901030	04					2	100						
901030	05							1	100				
901030	10			55	1					32	9		
901031	01					1	100						
901031	12					2	100						
901031	15	20	100										
901101	02									6	100		
901108	03									20	100		
901109	01					25	4						
901109	02											1	100
901109	03											10	100
901110	06	20	100										
901110	10	25	100										
901110	11											100	100
901111	03	20	100										
901112	03			1	100								
901116	01	20	100										
901116	02	15	100									10	100

Table 4B. (continued)

		obs 1		obs 7		obs 22		obs 73		obs 74		obs 76	
date	sight no.	best est.	pct	best est.	pct	best est.	pct	best est.	pct	best est.	pct	best est.	pct
species 77: UNIDENTIFIED DOLPHIN													
901120	03									2	100		
901120	05									80	20	150	10
901121	04	18	2							10	20	20	5
901122	06					1	100						
901126	04											1	100
901126	07					2	100	2	100				
901126	08							6	100				
901126	16					20	100						
901127	01							1	100				
901127	02			20	100	2	100	7	100				
901127	03							1	100				
901127	04							2	100				
901203	03			25	100	40	100						
901205	06					1	100						
901205	07					1	100						
901205	08			1	100								
species 78: UNIDENTIFIED SMALL WHALE													
901014	01			2	100			5	100				
901101	01											2	100
901101	07											1	100
901122	03											2	100
species 79: UNIDENTIFIED LARGE WHALE													
901013	07			1	100								
901023	04	1	100										
901124	01	1	100										
901201	01					1	100						
901201	05											1	100
901205	01							1	100				
species 96: UNIDENTIFIED CETACEAN													
901119	04											3	100
901126	06					2	100						
species 98: UNIDENTIFIED WHALE													
901111	01					3	100						
species 99: SEI/BRYDE'S WHALE													
901115	02	2	100	2	100	2	100			2	100	2	100
901121	05	1	100							1	100	1	100
901126	02	1	100										

Table 5. Summary of marine mammal sightings encountered in the eastern tropical Pacific during July 28 through Decenber 6, 1990.

species name (scientific name)	species code	species sightings total	pure	mixed	means of school size estimates low /(n)	high /(n)	best /(n)
OFFSHORE SPOTTED DOLPHIN (STENELLA ATTENUATA)	2	88	42	46	89.18(88)	150.99(88)	109.50(88)
SPINNER DOLPHIN (STENELLA LONGIROSTRIS)	3	3	1	2	7.71(3)	44.64(3)	14.74(3)
COMMON DOLPHIN (DELPHINUS DELPHIS)	5	7	7	0	182.43(7)	329.14(7)	243.43(7)
COASTAL SPOTTED DOLPHIN (S.A. GRAFFMANI)	6	2	2	0	12.00(2)	22.50(2)	14.50(2)
EASTERN SPINNER DOLPHIN (STENELLA LONGIROSTRIS)	10	38	9	29	74.65(38)	142.61(38)	93.87(38)
WHITEBELLY SPINNER DOLPHIN (STENELLA LONGIROSTRIS)	11	9	1	8	61.24(9)	89.93(9)	71.65(9)
STRIPED DOLPHIN (S. COERULEOALBA)	13	72	72	0	35.69(72)	56.74(72)	43.58(72)
ROUGH-TOOTHED DOLPHIN (STENO BREDANENSIS)	15	18	13	5	12.06(18)	17.85(18)	14.41(18)
"SHORT-SNOUTED WHITEBELLY" (DELPHINUS DELPHIS OFFSHORE)	17	21	19	2	290.51(21)	477.04(20)	377.82(20)
BOTTLENOSED DOLPHIN (TURSIOPS TRUNCATUS)	18	49	23	26	13.87(49)	22.45(48)	16.75(48)
RISSO'S DOLPHIN (GRAMPUS GRISEUS)	21	10	9	1	10.95(10)	19.10(10)	13.81(10)
PACIFIC WHITE-SIDED DOLPHIN (LAGENORHYNCHUS OBLIQUIDENS)	22	1	1	0	58.00(1)	92.00(1)	73.00(1)
FRASER'S DOLPHIN (LAGENODELPHIS HOSEI)	26	4	3	1	126.45(4)	176.58(4)	141.73(4)
UNIDENTIFIED DOLPHIN	77	134	126	8	20.22(133)	82.61(80)	42.59(81)

Table 5. (continued)

species name (scientific name)	species code	species sightings total	pure	mixed	means of school size estimates low /(n)	high /(n)	best /(n)
MELON-HEADED WHALE (PEPONOCEPHALA ELECTRA)	31	1	0	1	89.18(1)	112.67(1)	99.09(1)
PYGMY KILLER WHALE (FERESA ATTENUATA)	32	7	7	0	17.57(7)	24.71(7)	20.71(7)
FALSE KILLER WHALE (PSEUDORCA CRASSIDENS)	33	2	2	0	7.50(2)	14.00(2)	10.50(2)
PILOT WHALE (GLOBICEPHALA SP.)	34	1	1	0	13.00(1)	29.00(1)	16.00(1)
SHORT-FINNED PILOT WHALE (GLOBICEPHALA MACRORHYNCHUS)	36	26	17	9	13.51(26)	21.79(25)	16.74(25)
KILLER WHALE (ORCINUS ORCA)	37	8	7	1	2.52(8)	3.50(8)	2.77(8)
SPERM WHALE (PHYSETER MACROCEPHALUS)	46	12	12	0	4.25(12)	8.17(12)	5.42(12)
DWARF SPERM WHALE (KOGIA SIMUS)	48	7	7	0	1.29(7)	1.43(7)	1.29(7)
BEAKED WHALE (ZIPHIID)	49	11	11	0	2.27(11)	2.40(10)	2.27(11)
UNID. MESOPLODONT (MESOPLODON SP.)	51	18	18	0	1.94(17)	2.11(18)	2.00(17)
CUVIER'S BEAKED WHALE (ZIPHIUS CAVIROSTRIS)	61	11	11	0	1.73(11)	1.91(11)	1.73(11)
RORQUAL (BALAENOPTERA SP.)	70	32	32	0	1.12(32)	1.14(29)	1.10(29)
BRYDE'S WHALE (B. EDENI)	72	4	4	0	2.00(4)	2.75(4)	2.25(4)
BLUE WHALE (B. MUSCULUS)	75	2	2	0	1.00(2)	1.00(2)	1.00(2)
UNIDENTIFIED SMALL WHALE	78	13	13	0	3.69(13)	5.83(12)	4.50(12)
UNIDENTIFIED LARGE WHALE	79	20	20	0	1.25(20)	1.65(20)	1.30(20)
UNIDENTIFIED CETACEAN	96	7	7	0	1.71(7)	2.40(5)	2.00(5)
UNIDENTIFIED WHALE	98	19	19	0	1.53(19)	1.56(18)	1.56(18)
SEI/BRYDE'S WHALE (BALAENOPTERA EDENI/BOREALIS)	99	8	7	1	1.12(8)	1.29(8)	1.25(8)

Table 6. Summary of distance searched, dolphin schools detected, and rates of encountering dolphins by observers aboard the Jordan in the eastern tropical Pacific during July 28 through December 6, 1990.

	Distance Searched (km)[1]	Percent Distance Searched	Number Schools Detected	Percent Schools Detected	Detection Rate (Schools/ 1000 km)	S.E. Detection Rate	Number[2] Days Searched
All Data	13408	100	366	100	27.30	8.73	101
Inshore	6957	52	256	70	36.80	20.96	58
Middle	5278	39	93	25	17.62	10.06	40
West	922	7	13	4	14.10	25.23	7
South	251	2	4	1	15.97	11.64	3
Sea State Conditions							
Calm	1341	10	96	26	71.59	67.16	29
Rough	12067	90	270	74	22.37	6.87	97
Visibility Conditions							
Good	11722	87	317	87	27.04	8.82	101
Poor	1686	13	49	13	29.07	31.75	69
Observers[3]							
1	3269	24	29	8	8.87	5.43	48
7	3350	25	23	6	6.87	2.34	48
22	3308	25	31	8	9.37	5.90	48
55	3536	26	38	10	10.75	7.39	52
56	3330	25	25	7	7.51	2.85	52
67	3290	24	25	7	7.60	9.12	52
69	3330	25	32	9	9.61	6.46	52
71	3524	26	32	9	9.08	3.33	52
73	3318	25	37	10	11.15	3.18	48
74	3241	24	21	6	6.48	2.49	48
76	3142	23	53	14	16.87	6.26	47
77	3536	26	20	6	5.66	4.62	52

Table 6. (continued)

	Distance Searched (km)	Percent Distance Searched	Number Schools Detected	Percent Schools Detected	Detection Rate (Schools/ 1000 km)	S.E. Detection Rate	Number[2] Days Searched
Teams[4]							
Team 1	3190	24	105	29	32.91	26.47	48
Team 2	3271	24	89	24	27.21	13.52	48
Team 3	3536	26	90	25	25.46	28.76	52
Team 4	3330	25	82	22	24.62	25.66	52

[1]Numbers may not add precisely due to rounding.

[2]Day included in tally of searching effort if variable occurred during any part of the day.

[3]Observer 80 searched 40 km of trackline while substituting for sick personnel.

[4]Team 1 members were observers 1,74,76; Team 2 members were observers 7,22,73; Team 3 members were observers 55,71,77; and Team 4 members were observers 56,67,69. 81km of trackline was searched when either both or neither of the team leaders were on duty and is not used for team analysis.

Table 7. Helicopter cetacean sampling effort

Leg number	Days flown	Flight hours	# of schools photographed
1	4	5.7	3
2	10	20.0	18
3	11	30.2	21
4	18	41.1	22
Totals	43	97.0	64

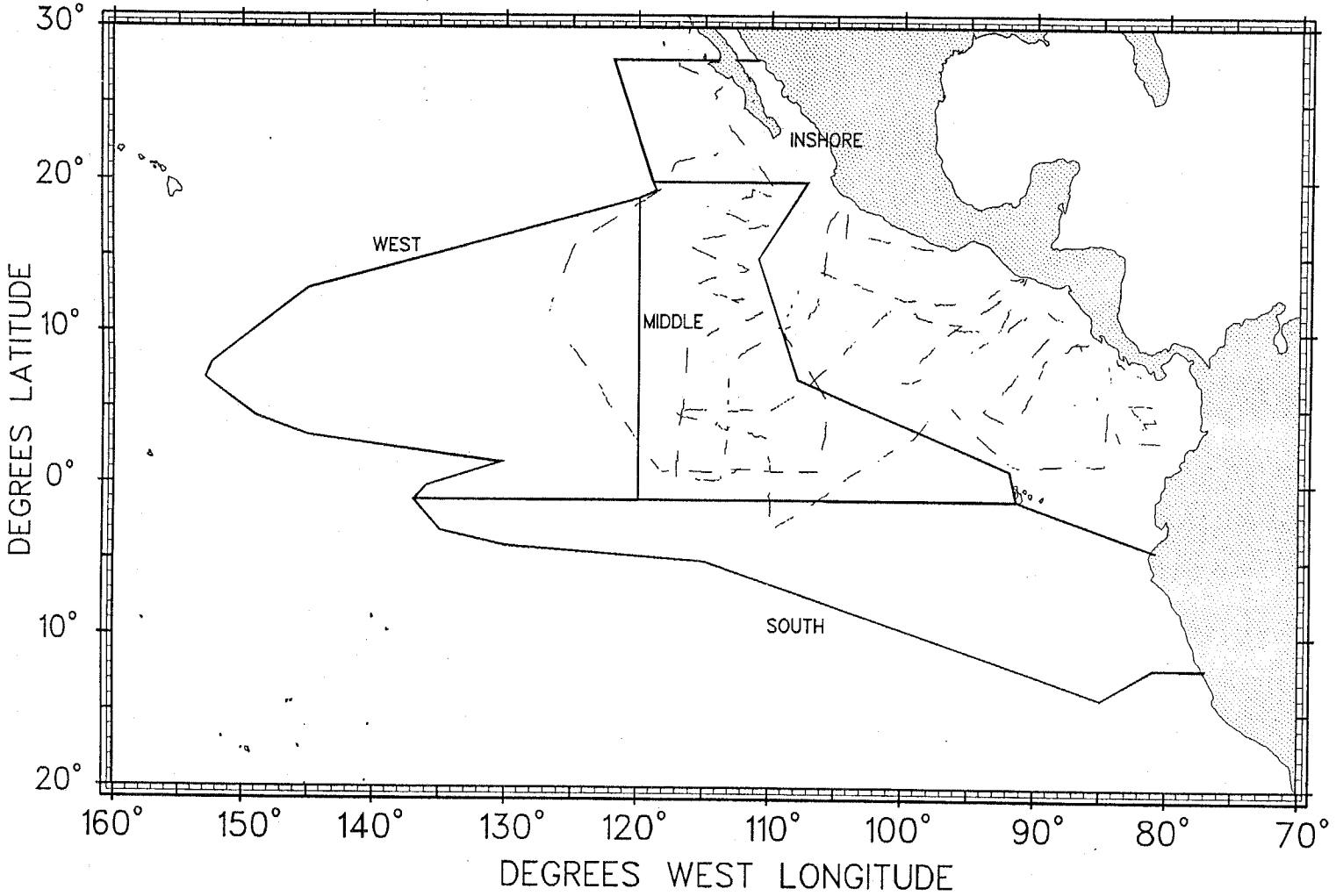


Figure 1. Tracklines surveyed by the NOAA Ship David Starr Jordan from July 28 through December 6, 1990, in the eastern tropical Pacific.

CRUISE #	YEAR	MONTH	DAY
1	5	7	9

RESEARCH SHIP
MARINE MAMMAL
DAILY EFFORT RECORD

SERIES #	LEG #	START OF LEG										END OF LEG	COMPASS COURSE	VESSEL SPEED	POSITION: ONE OR MORE PER SERIES				OBSERVER POSITION			SIGHTING Y/N	END LEG CODE
		TIME	SURFACE TEMP. °F & 10ths	BEAU #	FOG/RAIN	HORZ SUN	VERT SUN	WIND DIRECTION °T	SWELL DIRECTION °T	SWELL HEIGHT FEET	VIS.	TIME	°T	KTS & 10ths	LATITUDE	N / S	LONGITUDE	E / W	LEFT BINO.	RIGHT BINO.	REC		
11	13	15	19	22	23	24	26	28	31	34	36	38	42	45	48	52	53	58	59	61	63	65	66

ENDING CODES

1 = COURSE CHANGE
2 = SPEED CHANGE
4 = EFFORT TERMINATED
5 = LEG ENDS TO RECORD POSITION IN FOLLOWING LEG
8 = LEG ENDS TO CHANGE IN ENVIRONMENTAL CONDITIONS
9 = LEG ENDS DUE TO CHANGE IN OBSERVER POSITIONS

FOG/RAIN CODES

1 = NO FOG OR RAIN
2 = FOG
3 = RAIN
4 = FOG AND RAIN
5 = HAZY, BUT NO FOG OR RAIN

NOTES:

NOAA FORM 88-209 (6/90)

Figure 2. Research ship marine mammal daily effort record.

RESEARCH SHIP MARINE MAMMAL SIGHTING RECORD

CRUISE #	DATE YEAR	DATE MONTH	DATE DAY	SIGHT #	SERIES #	LEG #	CARD #
							0 1
1	5	7	9	11	13	15	17

SIGHTING CUE: TIME	CUE CODE	SIGHT CODE	BEARING FROM SHIP	DISTANCE nm & 10ths	ENVIR. COND. AT CUE: BEAU #	SURF TEMP °F & 10ths	HORZ SUN	VERT SUN	POSITION AT TIME OF CUE: LATITUDE	N/S	LONGITUDE	E/W	SOURCE CODE	TIME M.M. SIGHTED	BIRDS Y/N	OBSERVER POSITIONS: LEFT BINO.	RIGHT BINO.	REC	M.M. DETECTED BY
19	23	24	25	28	31	32	35	37	39	43	44	49	50	51	55	56	58	60	62

OBSERVER 1

OBS. CODE	SCHOOL SIZE ESTIMATE: BEST	HIGH	LOW	CARD #	SPECIES 1 %	SP 1 CODE	SPECIES 2 %	SP 2 CODE	SPECIES 3 %	SP 3 CODE	SPECIES 4 %	SP 4 CODE
				0 2								
64	66	70	74	77 17	19	22	24	27	29	32	34	37

S P 1 | S P 2 | S P 3 | S P 4

OBSERVER 2

OBS. CODE	SCHOOL SIZE ESTIMATE: BEST	HIGH	LOW	SPECIES 1 %	SP 1 CODE	SPECIES 2 %	SP 2 CODE	SPECIES 3 %	SP 3 CODE	SPECIES 4 %	SP 4 CODE
39	41	45	49	53	56	58	61	63	66	68	71

S P 1 | S P 2 | S P 3 | S P 4

OBSERVER 3

OBS. CODE	SCHOOL SIZE ESTIMATE: BEST	CARD #	HIGH	LOW	SPECIES 1 %	SP 1 CODE	SPECIES 2 %	SP 2 CODE	SPECIES 3 %	SP 3 CODE	SPECIES 4 %	SP 4 CODE
		0 3										
73	75	78 17	19	23	27	30	32	35	37	40	42	45

S P 1 | S P 2 | S P 3 | S P 4

OBSERVER 4

OBS. CODE	SCHOOL SIZE ESTIMATE: BEST	HIGH	LOW	SPECIES 1 %	SP 1 CODE	SPECIES 2 %	SP 2 CODE	SPECIES 3 %	SP 3 CODE	SPECIES 4 %	CARD #	SP 4 CODE
											0 4	
47	49	53	57	61	64	66	69	71	74	76	78 17	19

S P 1 | S P 2 | S P 3 | S P 4

OBSERVER 5

OBS. CODE	SCHOOL SIZE ESTIMATE: BEST	HIGH	LOW	SPECIES 1 %	SP 1 CODE	SPECIES 2 %	SP 2 CODE	SPECIES 3 %	SP 3 CODE	SPECIES 4 %	SP 4 CODE
23	27	31	35	38	40	43	45	50	53		

S P 1 | S P 2 | S P 3 | S P 4

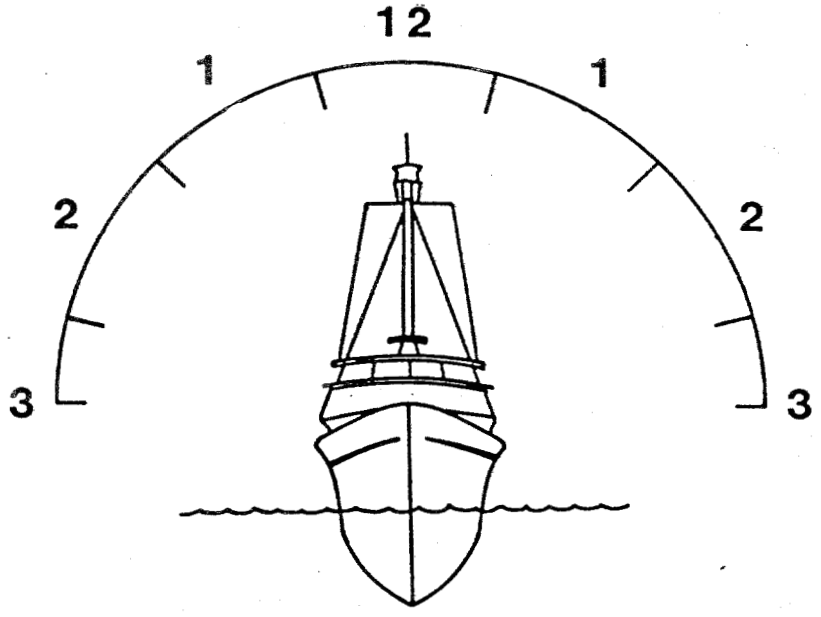
OBSERVER 6

OBS. CODE	SCHOOL SIZE ESTIMATE: BEST	HIGH	LOW	SPECIES 1 %	SP 1 CODE	SPECIES 2 %	SP 2 CODE	CARD #	SPECIES 3 %	SP 3 CODE	SPECIES 4 %	SP 4 CODE	RC 1	RC 2	RC 3	RC 4	RC 5	RC 6
								0 5										
55	57	61	65	69	72	74	77	78 17	19	22	24	27	29	30	31	32	33	34

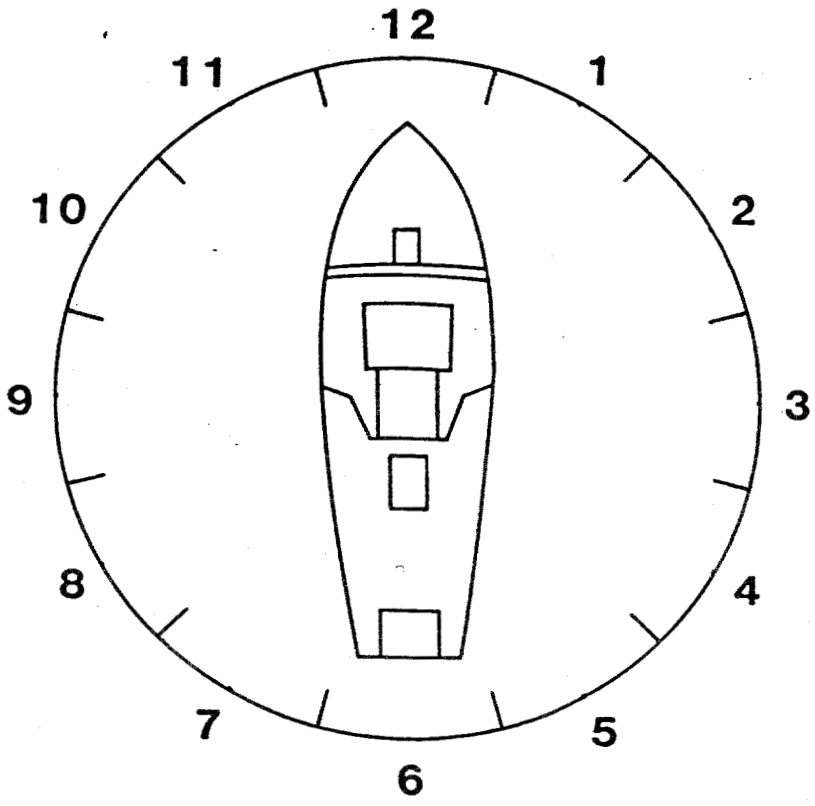
S P 1 | S P 2 | S P 3 | S P 4

Figure 3. Research ship marine mammal sighting record.

NOAA FORM 89-207 (6/80)



VERTICAL SUN POSITION



HORIZONTAL SUN POSITION

Figure 4. Vertical and horizontal sun position categories.

Figure 5. Research ship sighting continuation record.

CRUISE #	DATE YEAR	DATE MONTH	DATE DAY	SIGHT #	SERIES #	LEG #	OBS. CODE
1	5	7	9	11	13	15	17

SIGHTING SUMMARY

LIST ALL DIAGNOSTIC FEATURES OBSERVED (INCLUDING ESTIMATED BODY LENGTH)

SKETCH FEATURES OF ANIMALS SIGHTED

BEHAVIOR – (DESCRIBE AGGREGATION, MOVEMENT, BOW AND STERN RIDING, BLOWS, ETC.)

MOVEMENT OF SCHOOL: SPEED (KTS) [ ] DIRECTION (RELATIVE TO BOW) [ ]

ASSOCIATED ANIMALS – (INCLUDE NUMBER AND SPECIES OF BIRDS)

PHOTOS: ROLL # _____

FRAME(S): # _____

TOTAL TIME OF OBSERVATION _____

ENVIR. COND. (RAIN, OVERCAST, FOG, CHOPPY) _____

CLOSEST DISTANCE OF OBSERVATION _____

AMT. OF TIME AT CLOSEST DISTANCE _____

TAGS ASSOCIATED WITH SIGHTING _____

METHOD OF OBSERVATION (EYE, 7x, 10x, 25x) _____

NOAA FORM 88-105a

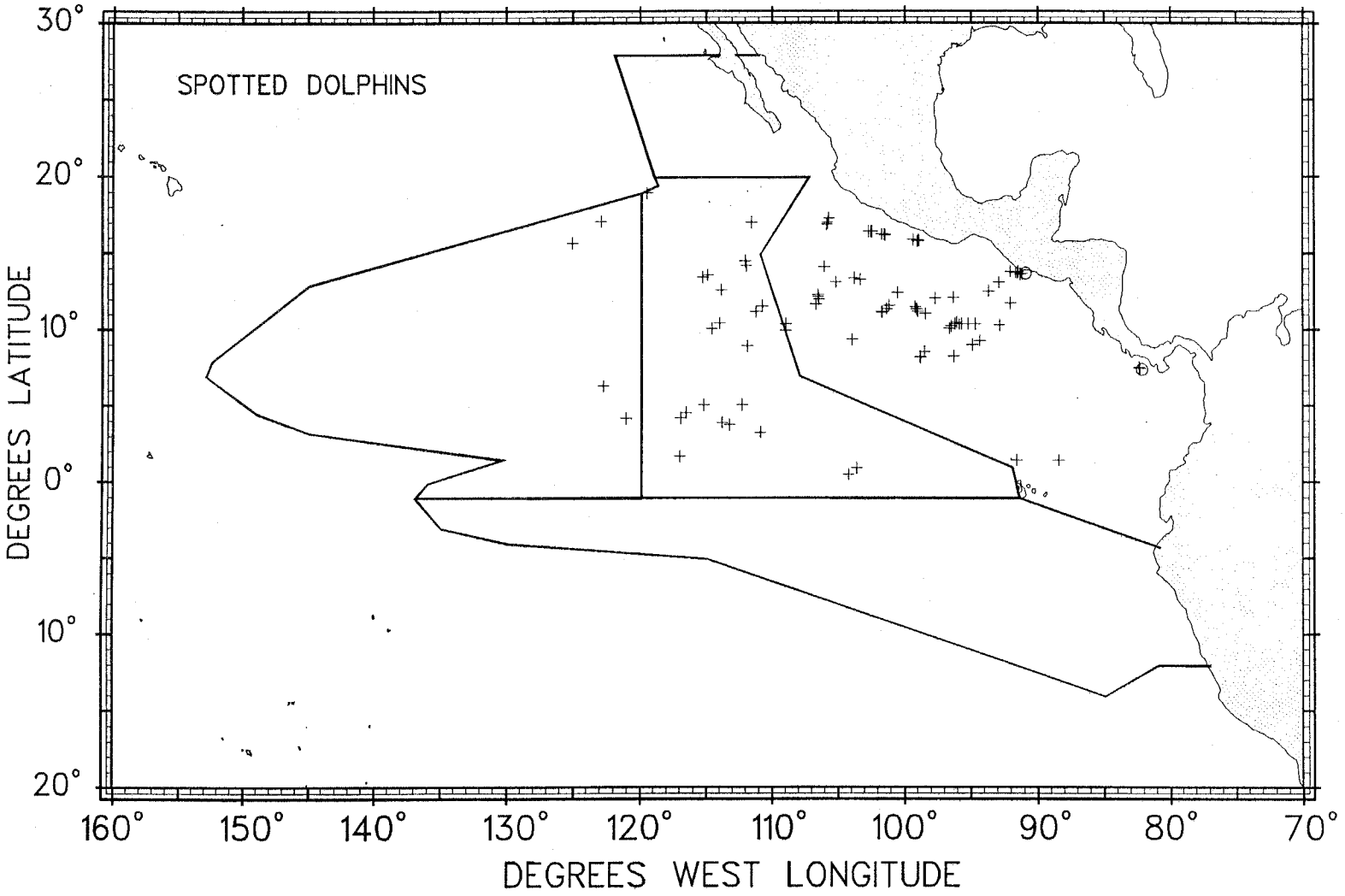


Figure 6. Offshore (+) and coastal (o) spotted dolphins detected from aboard the NOAA Ship David Starr Jordan from July 28 through December 6, 1990, in the eastern tropical Pacific.

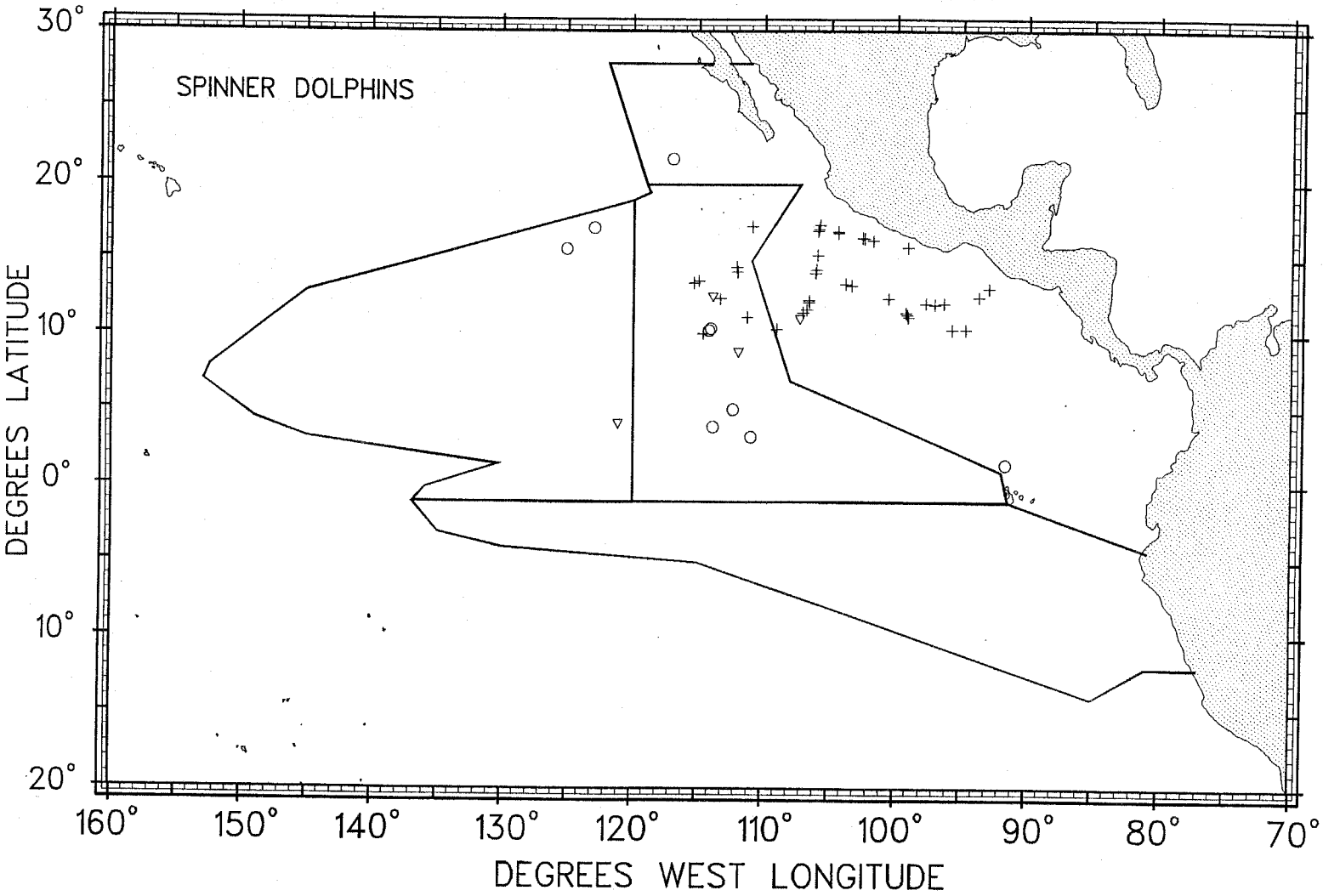


Figure 7. Eastern (+), whitebelly (o) and unidentified (▽) spinner dolphins detected from aboard the NOAA Ship David Starr Jordan from July 28 through December 6, 1990, in the eastern tropical Pacific.

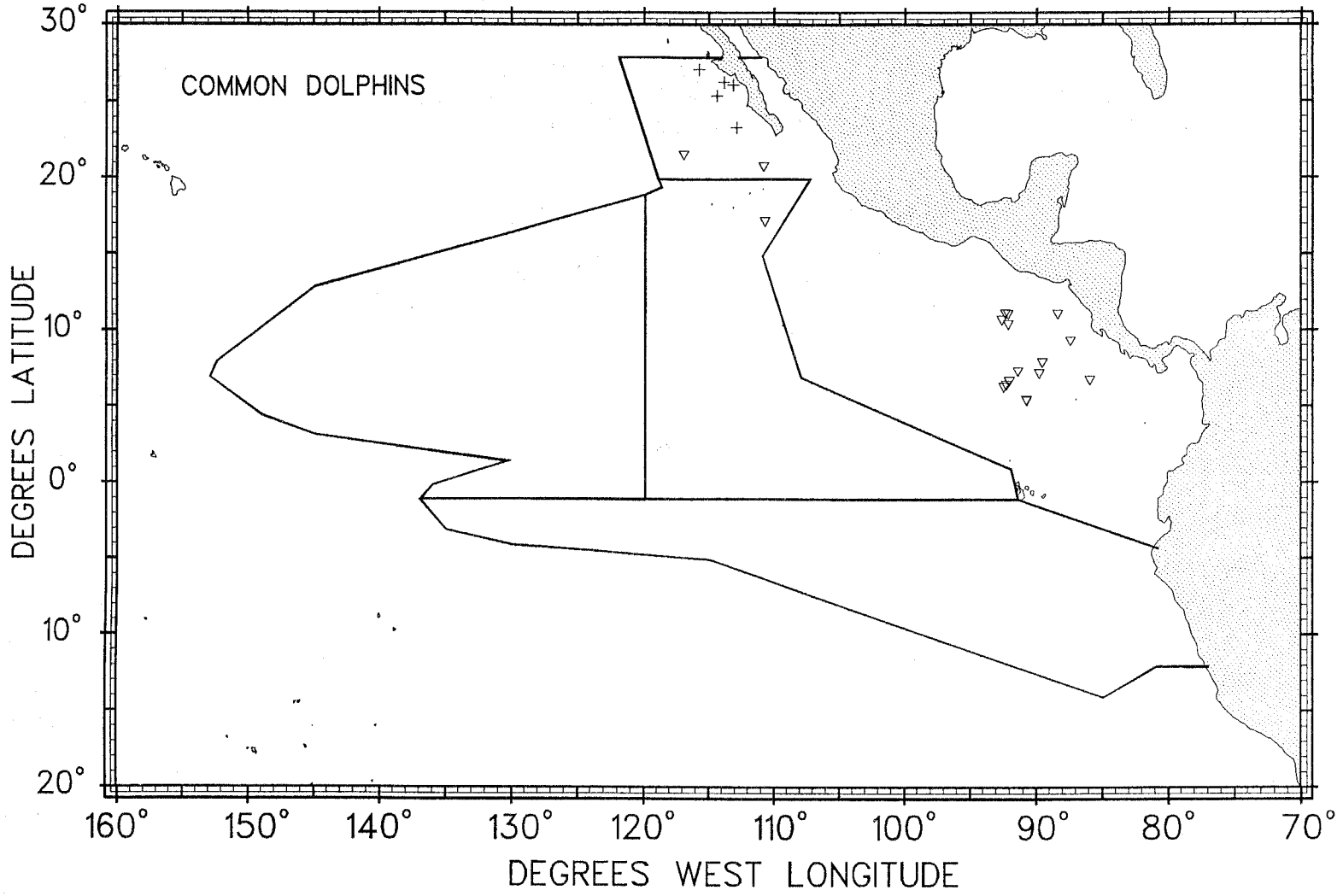


Figure 8. Unidentified (+) and offshore (▽) common dolphins detected from aboard the NOAA Ship David Starr Jordan from July 28 through December 6, 1990, in the eastern tropical Pacific.

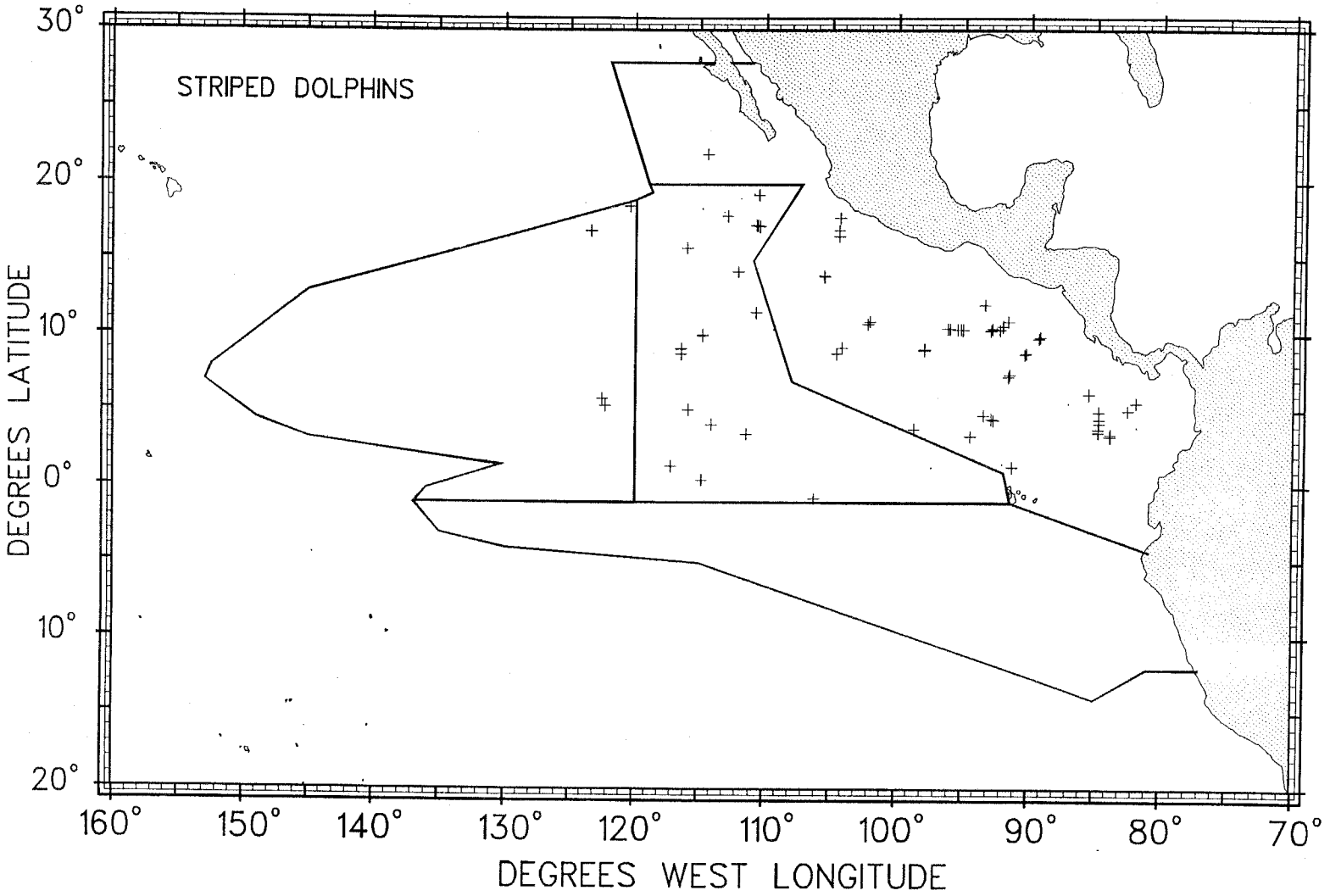


Figure 9. Striped dolphins (+) detected from aboard the NOAA ship David Starr Jordan from July 28 through December 6, 1990, in the eastern tropical Pacific.

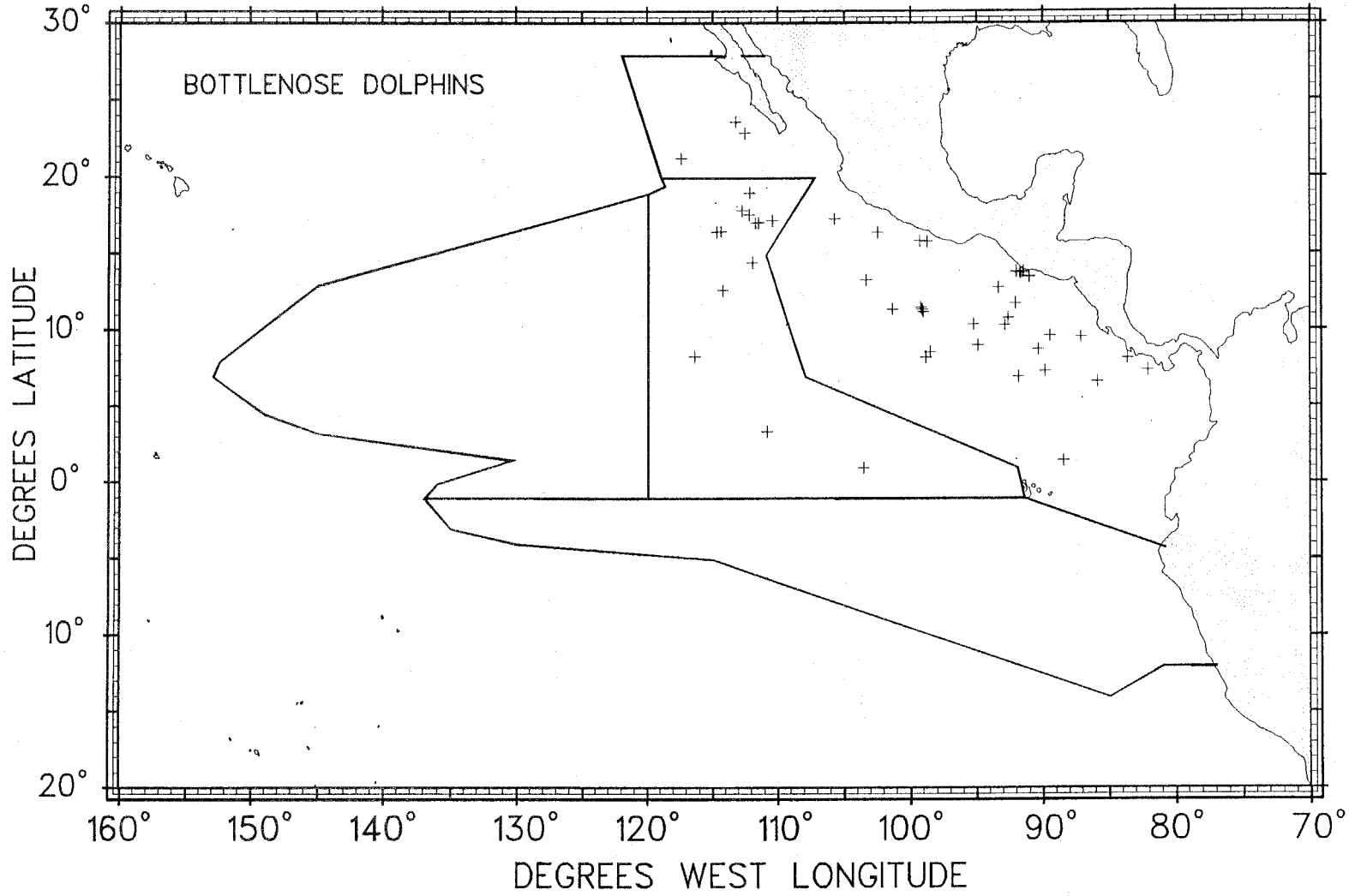


Figure 10. Bottlenose dolphins (+) detected from aboard the NOAA Ship David Starr Jordan from July 28 through December 6, 1990, in the eastern tropical Pacific.

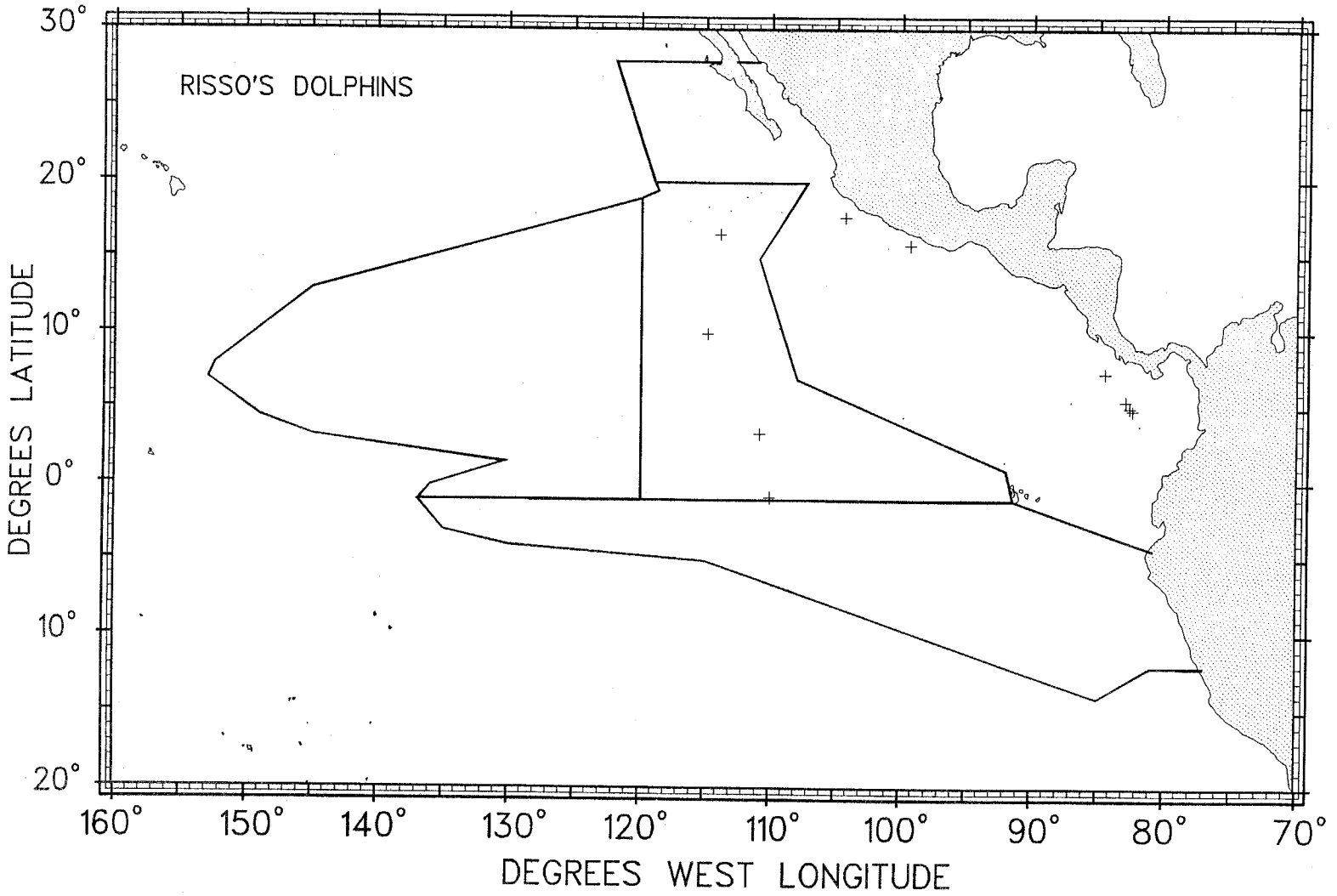


Figure 11. Risso's dolphins (+) detected from aboard the NOAA Ship David Starr Jordan from July 28 through December 6, 1990, in the eastern tropical Pacific.

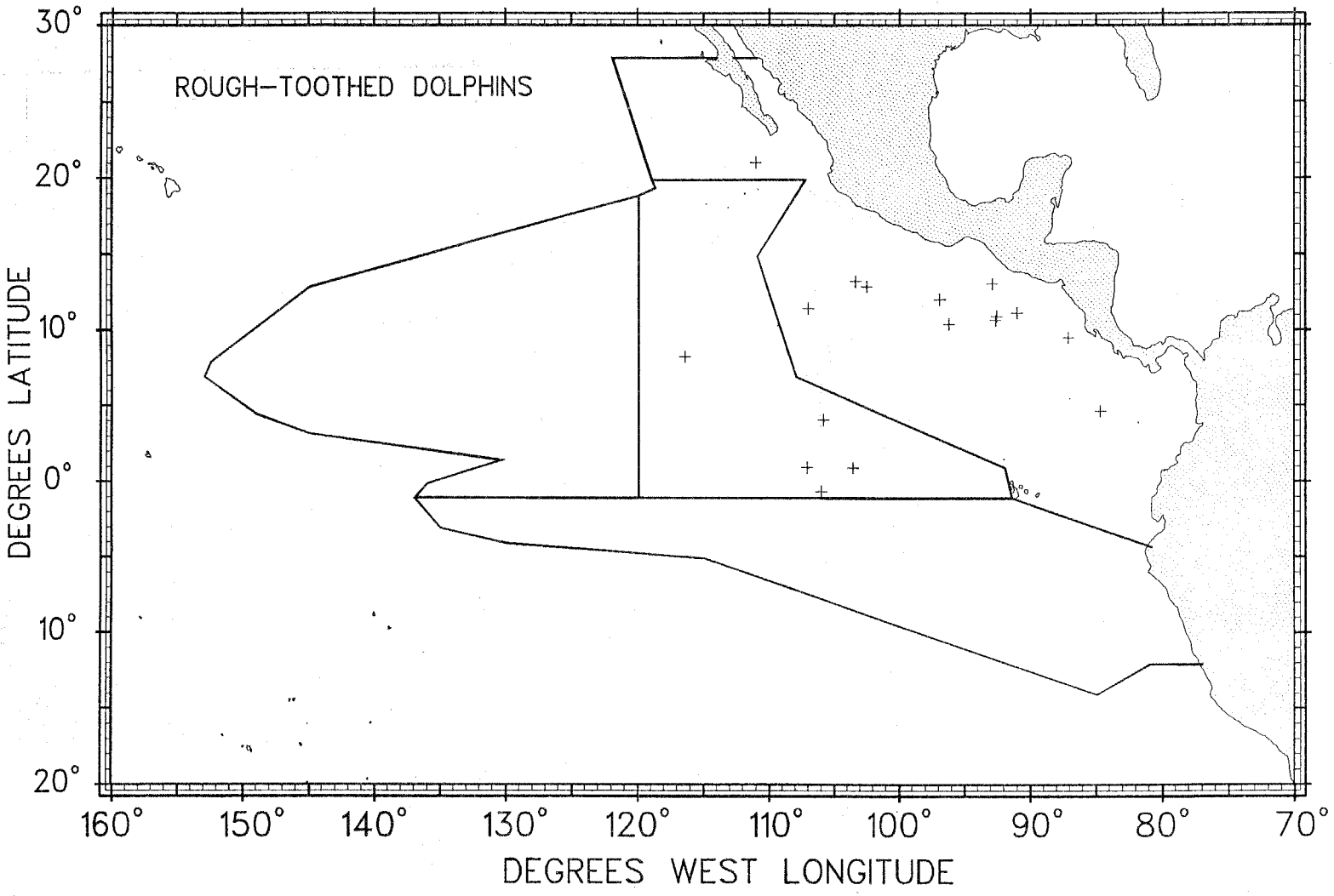


Figure 12. Rough-toothed dolphins (+) detected from aboard the NOAA Ship David Starr Jordan from July 28 through December 6, 1990, in the eastern tropical Pacific.

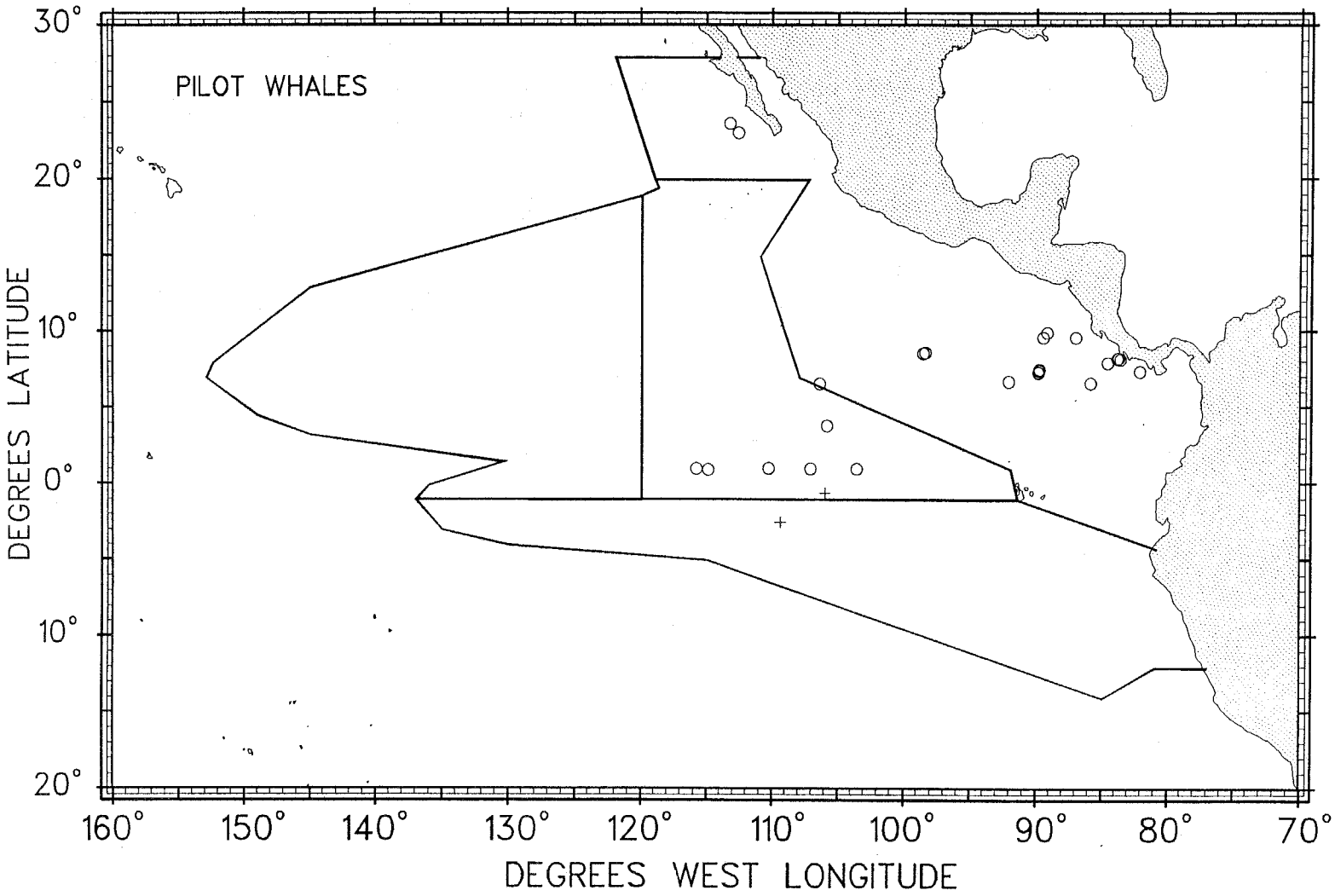


Figure 13. Unidentified (+) and short-finned (o) pilot whales detected from aboard the NOAA Ship David Starr Jordan from July 28 through December 6, 1990, in the eastern tropical Pacific.

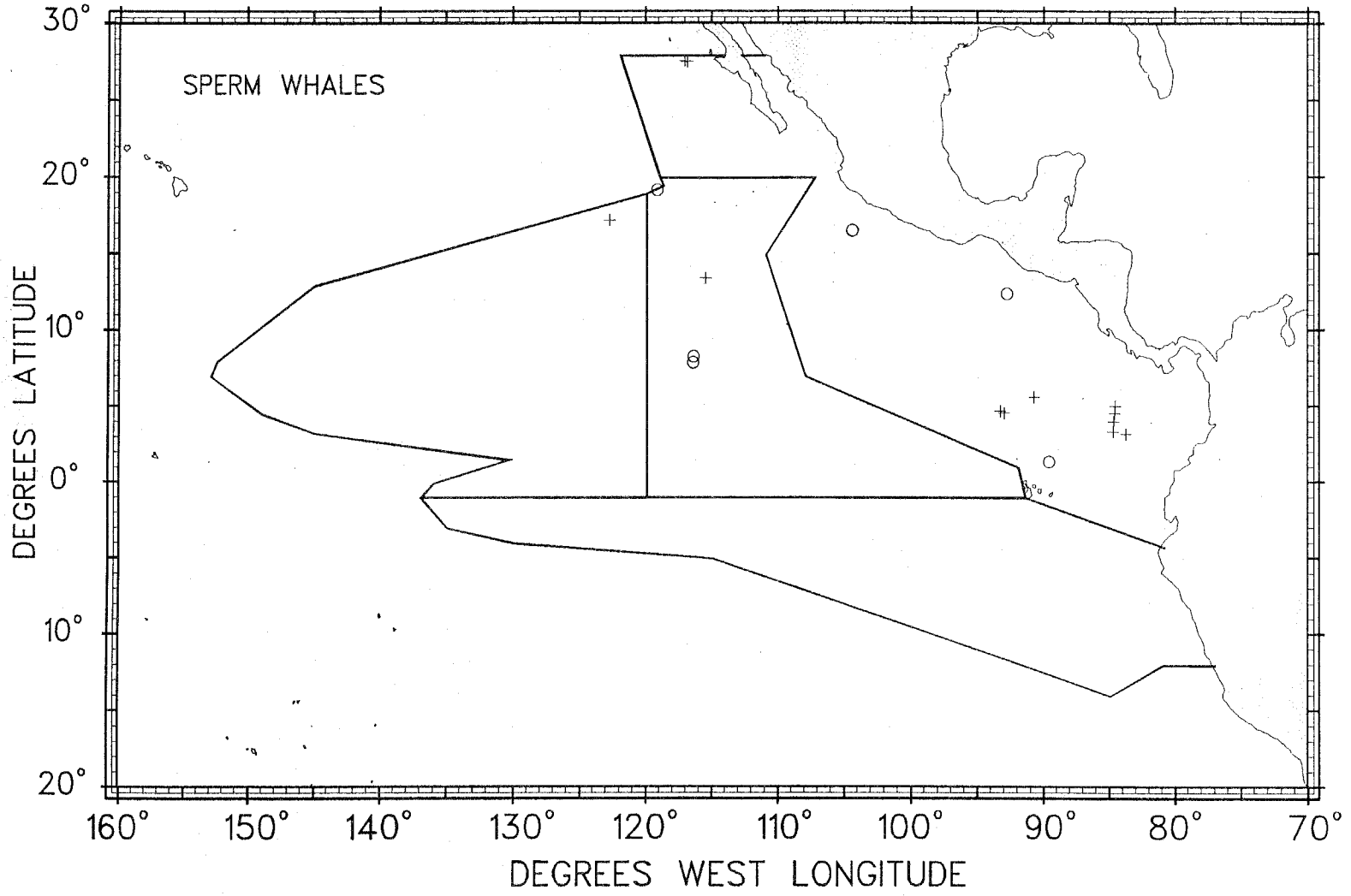


Figure 14. Sperm (+) and dwarf sperm (o) whales detected from aboard the NOAA Ship David Starr Jordan from July 28 through December 6, 1990, in the eastern tropical Pacific.

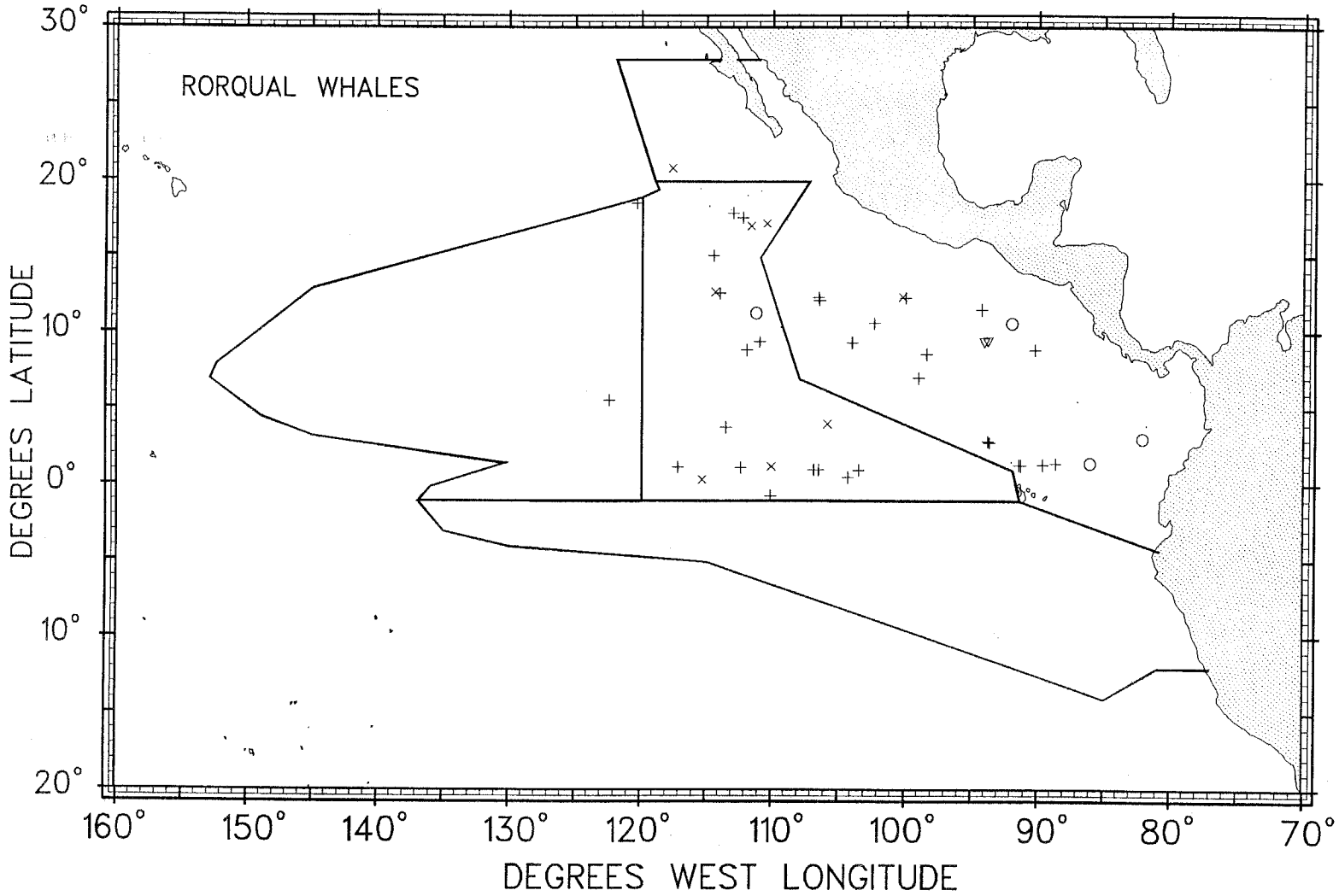


Figure 15. Unidentified rorqual (+), Bryde's (o), blue (▽) and unidentified (sei/Bryde's; x) whales detected from aboard the NOAA Ship David Starr Jordan from July 28 through December 6, 1990, in the eastern tropical Pacific.

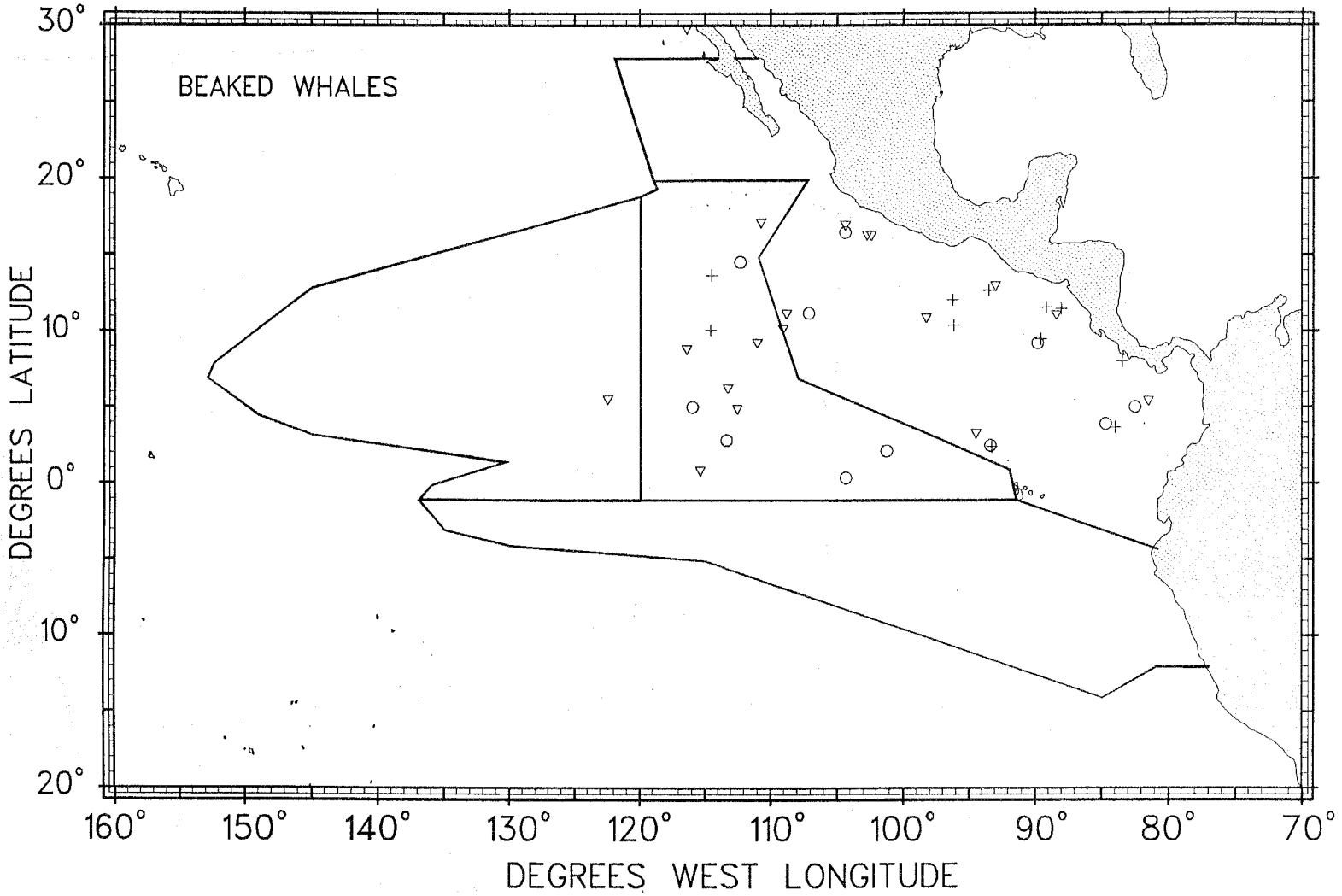


Figure 16. Unidentified beaked (+), Cuvier's beaked (o) and unidentified mesoplodon (▽) whales detected from aboard the NOAA Ship David Starr Jordan from July 28 through December 6, 1990, in the eastern tropical Pacific.

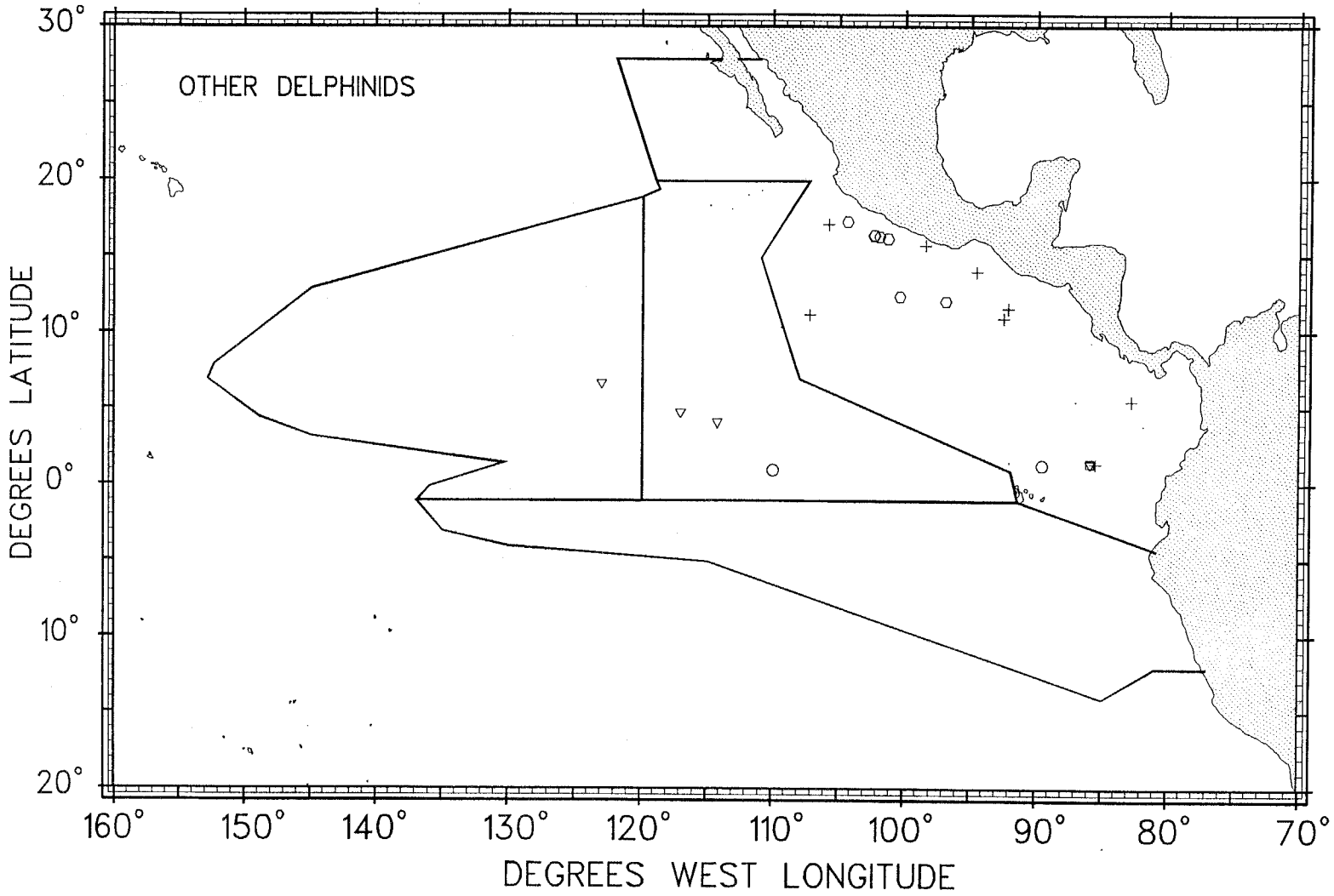


Figure 17. Killer (+) and false killer (o) whales, Fraser's dolphins (▽) and melon-headed (□) and pygmy killer (o) whales detected from aboard the NOAA Ship David Starr Jordan from July 28 through December 6, 1990, in the eastern tropical Pacific.

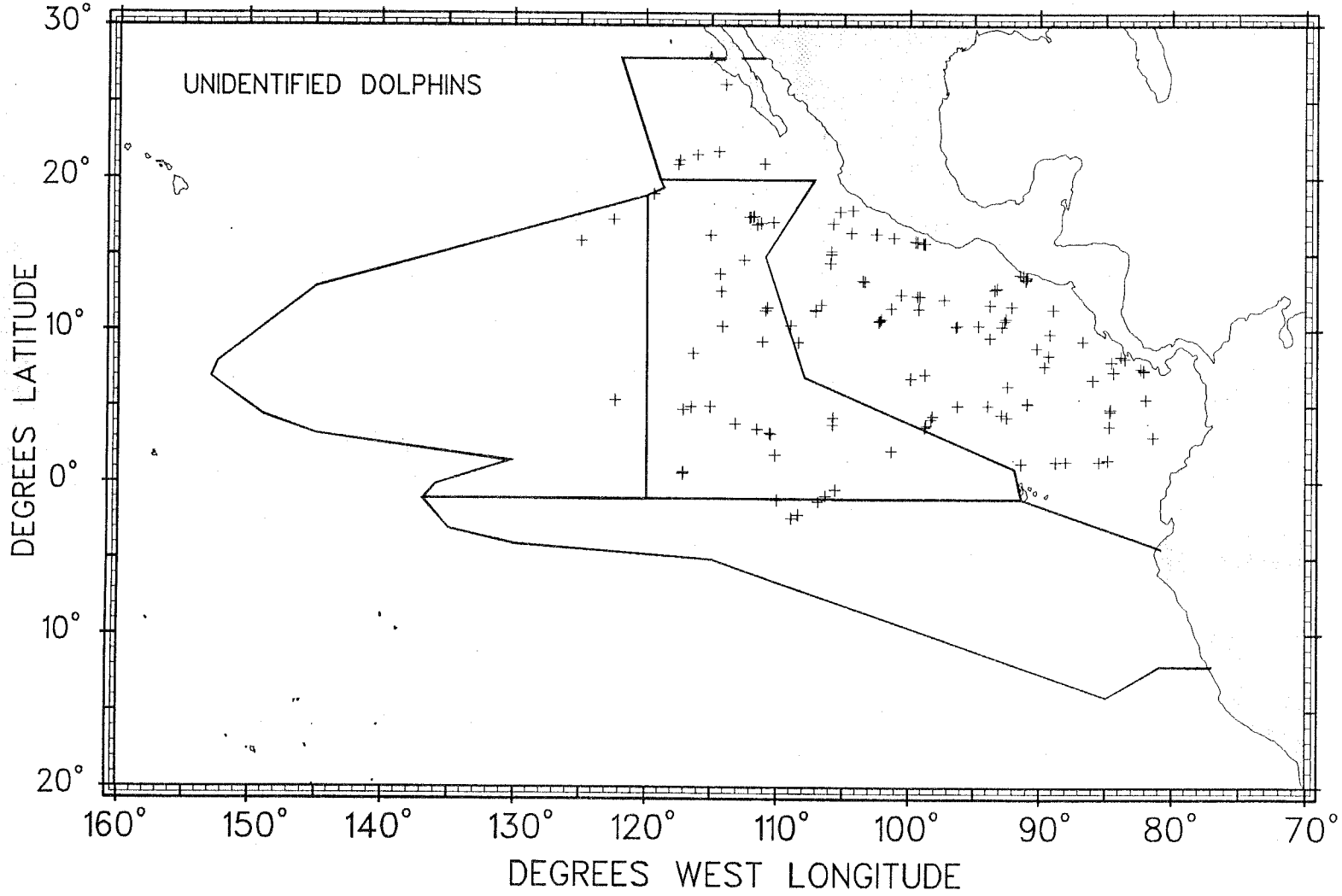


Figure 18. Unidentified dolphins (+) detected from aboard the NOAA Ship David Starr Jordan from July 28 through December 6, 1990, in the eastern tropical Pacific.

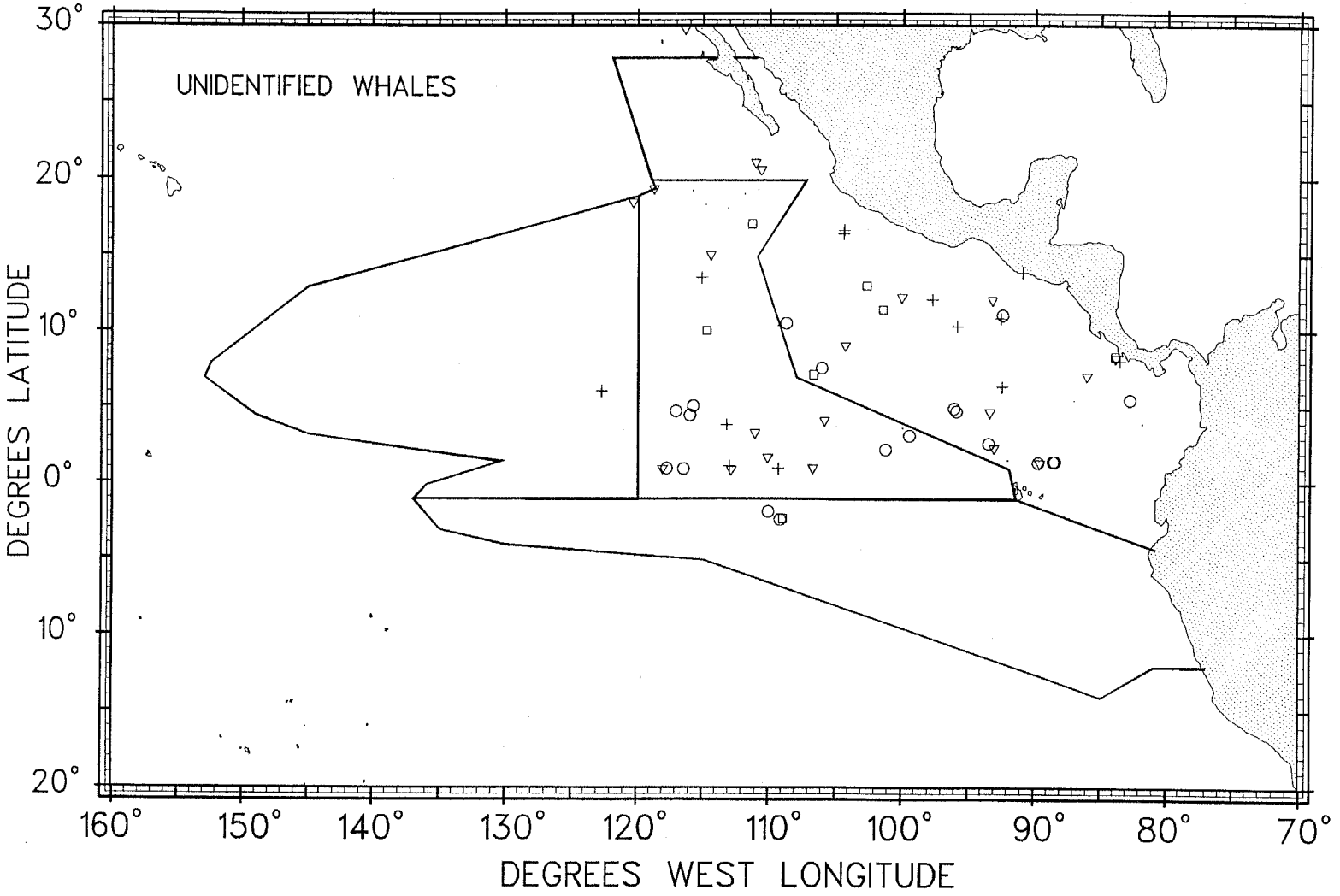


Figure 19. Unidentified small whales (+), unidentified whales (o), unidentified large whales (▽) and unidentified cetaceans (□) detected from aboard the NOAA Ship David Starr Jordan from July 28 through December 6, 1990, in the eastern tropical Pacific.

RECENT TECHNICAL MEMORANDUMS

Copies of this and other NOAA Technical Memorandums are available from the National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22167. Paper copies vary in price. Microfiche copies cost $4.50. Recent issues of NOAA Technical Memorandums from the NMFS Southwest Fisheries Science Center are listed below:

NOAA-TM-NMFS-SWFSC- 148 United states agency for international development and national marine fisheries service workshop on tropical fish stock assessment, 5-26 July 1989, Honolulu, Hawaii.
J.J. POLOVINA and R.S. SHOMURA
(September 1990)

149 Summary of the 1988 U.S. tuna/porpoise observer data.
A.R. JACKSON
(September 1990)

150 Population monitoring of the Hawaiian Monk Seal, *Monachus schauinslandi*, and captive maintenance project at Kure Atoll, 1988.
J.R. HENDERSON and M.R. FINNEGAN
(September 1990)

151 The Hawaiian Monk Seal on Laysan Island, 1988.
T.C. JOHANOS, B.L. BECKER, M.A. BROWN, B.K. CHOY, L.M. HURUKI, R.E. BRAINARD and R.L. WESTLAKE
(September 1990)

152 A personal computer based system for analog-to-digital and serial communication data acquisition.
R.C. HOLLAND
(November 1990)

153 The nearshore physical oceanography off the central California coast during May-June, 1989: A summary of CTD from juvenile rockfish surveys.
F.B. SCHWING, S. RALSTON, D.M. HUSBY and W.H. LENARZ
(December 1990)

154 Proceedings of the second international conference on marine debris 2-7 April, 1989, Honolulu, Hawaii. Volumes I & II.
R.S. SHOMURA and M.L. GODFREY (Editors)
(December 1990)

155 The Hawaiian Monk Seal, Monachus schauinslandi, at Kure Atoll, 1982-83.
C.E. BOWLBY, P.D. SCOGGINS, R.T. WATSON and M.L. REDDY
(February 1991)

156 Research plan for marine turtle fibropapilloma results of a December 1990 workshop.
G.H. BALAZS and S.G. POOLEY (Editors)
(February 1991)

157 Documentation of the 1980 data verification programs and common subroutines for fixed-format data: Porpoise data management system.
C.W. OLIVER and R.L. BUTLER
(March 1991)