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POR-2030
(WT-2030)
VOLUME 2

FISH BOWL SERIES

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PROJECT OFFICERS REPORT—PROJECT 6.11

HF COMMUNICATIONS EXPERIMENT (U)

350109

Howard L. Kitts, Project Officer

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U. S. Army Electronics Research and
Development Laboratory
Fort Monmouth, New Jersey

John B. Lomax, SRI Project Officer,
and the staff of the Communication
Laboratory
Stanford Research Institute
Menlo Park, California

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CONTENTS

PART 2 18-KC PHASE AND AMPLITUDE----- 11

CHAPTER 1 INTRODUCTION----- 13

CHAPTER 2 STAR FISH----- 31

 2.1 General ----- 31

 2.2 Palo Alto ----- 31

 2.3 Midway ----- 33

 2.4 Kauai ----- 34

 2.5 South Point ----- 36

 2.6 Viti Levu ----- 37

 2.7 Tutuila ----- 38

 2.8 Canton ----- 39

 2.9 Wake ----- 40

 2.10 Roi-Namur ----- 41

 2.11 Summary----- 42

CHAPTER 3 CHECK MATE----- 51

 3.1 General ----- 51

 3.2 Okinawa ----- 51

 3.3 Midway----- 53

 3.4 Kauai ----- 54

 3.5 Tutuila ----- 55

 3.6 Canton ----- 57

 3.7 Viti Levu ----- 58

 3.8 South Point ----- 59

 3.9 Wake ----- 60

 3.10 Rarotonga ----- 61

 3.11 Palo Alto ----- 61

 3.12 Roi-Namur ----- 62

 3.13 Summary ----- 63

CHAPTER 4 BLUE GILL ----- 75

 4.1 General ----- 75

 4.2 Okinawa ----- 75

 4.3 Palo Alto ----- 77

 4.4 Wake ----- 78

 4.5 Kauai ----- 80

 4.6 South Point ----- 81

 4.7 Roi-Namur ----- 82

 4.8 Tutuila ----- 84

 4.9 Viti Levu ----- 85

 4.10 Midway ----- 86

 4.11 Summary ----- 87

| | |
|---------------------------------------------|-----|
| CHAPTER 5 KING FISH ----- | 97 |
| 5.1 General ----- | 97 |
| 5.2 Wake ----- | 98 |
| 5.3 Kauai ----- | 99 |
| 5.4 South Point ----- | 100 |
| 5.5 Viti Levu ----- | 102 |
| 5.6 Fairbanks ----- | 103 |
| 5.7 Roi-Namur ----- | 104 |
| 5.8 Tutuila ----- | 105 |
| 5.9 Summary ----- | 106 |
| CHAPTER 6 DISCUSSION OF RESULTS ----- | 115 |
| APPENDIX TABULATIONS OF SPECTRUM GAPS ----- | 118 |

TABLES

| | |
|----------------------------------------------|-----|
| 1.1 Fish Bowl Event Names and Times ----- | 24 |
| A.1 Roi-Namur to Hawaii, Star Fish ----- | 118 |
| A.2 Roi-Namur to Kauai, Star Fish ----- | 120 |
| A.3 Canton to Fairbanks, Star Fish ----- | 122 |
| A.4 Canton to Midway, Star Fish ----- | 124 |
| A.5 Kauai to Wake, Star Fish ----- | 126 |
| A.6 Kauai to Midway, Star Fish ----- | 128 |
| A.7 Canton to Hawaii, Star Fish ----- | 130 |
| A.8 Canton to Wake, Star Fish ----- | 132 |
| A.9 Canton to Viti Levu, Star Fish ----- | 134 |
| A.10 Canton to Tutuila, Star Fish ----- | 136 |
| A.11 Canton to Rarotonga, Star Fish ----- | 138 |
| A.12 Roi-Namur to Tutuila, Star Fish ----- | 140 |
| A.13 Roi-Namur to Viti Levu, Star Fish ----- | 142 |
| A.14 Roi-Namur to Rarotonga, Star Fish ----- | 144 |
| A.15 Roi-Namur to Midway, Star Fish ----- | 146 |
| A.16 Kauai to Tutuila, Star Fish ----- | 148 |
| A.17 Roi-Namur to Palo Alto, Star Fish ----- | 150 |
| A.18 Okinawa to Hawaii, Star Fish ----- | 152 |
| A.19 Canton to Palo Alto, Star Fish ----- | 154 |
| A.20 Kauai to Fairbanks, Star Fish ----- | 156 |
| A.21 Kauai to Rarotonga, Star Fish ----- | 158 |
| A.22 Roi-Namur to Wake, Star Fish ----- | 160 |
| A.23 Roi-Namur to Fairbanks, Star Fish ----- | 162 |
| A.24 Kauai to Palo Alto, Star Fish ----- | 164 |
| A.25 Okinawa to Palo Alto, Star Fish ----- | 166 |
| A.26 Okinawa to Tutuila, Star Fish ----- | 168 |
| A.27 Okinawa to Fairbanks, Star Fish ----- | 170 |
| A.28 Roi-Namur to Hawaii, Check Mate ----- | 172 |
| A.29 Roi-Namur to Kauai, Check Mate ----- | 174 |
| A.30 Canton to Fairbanks, Check Mate ----- | 176 |
| A.31 Canton to Midway, Check Mate ----- | 178 |
| A.32 Kauai to Wake, Check Mate ----- | 180 |
| A.33 Kauai to Midway, Check Mate ----- | 182 |

| | | |
|------|------------------------------------|-----|
| A.34 | Canton to Hawaii, Check Mate | 184 |
| A.35 | Canton to Wake, Check Mate | 186 |
| A.36 | Canton to Viti Levu, Check Mate | 188 |
| A.37 | Canton to Tutuila, Check Mate | 190 |
| A.38 | Canton to Rarotonga, Check Mate | 192 |
| A.39 | Roi-Namur to Tutuila, Check Mate | 194 |
| A.40 | Roi-Namur to Viti Levu, Check Mate | 196 |
| A.41 | Roi-Namur to Rarotonga, Check Mate | 198 |
| A.42 | Roi-Namur to Midway, Check Mate | 200 |
| A.43 | Kauai to Tutuila, Check Mate | 202 |
| A.44 | Roi-Namur to Palo Alto, Check Mate | 204 |
| A.45 | Okinawa to Hawaii, Check Mate | 206 |
| A.46 | Canton to Palo Alto, Check Mate | 208 |
| A.47 | Kauai to Rarotonga, Check Mate | 210 |
| A.48 | Roi-Namur to Wake, Check Mate | 212 |
| A.49 | Roi-Namur to Fairbanks, Check Mate | 214 |
| A.50 | Okinawa to Tutuila, Check Mate | 216 |
| A.51 | Roi-Namur to Hawaii, Blue Gill | 218 |
| A.52 | Roi-Namur to Kauai, Blue Gill | 220 |
| A.53 | Canton to Fairbanks, Blue Gill | 222 |
| A.54 | Canton to Midway, Blue Gill | 224 |
| A.55 | Kauai to Wake, Blue Gill | 226 |
| A.56 | Kauai to Midway, Blue Gill | 228 |
| A.57 | Canton to Hawaii, Blue Gill | 230 |
| A.58 | Canton to Tutuila, Blue Gill | 232 |
| A.59 | Roi-Namur to Tutuila, Blue Gill | 234 |
| A.60 | Roi-Namur to Rarotonga, Blue Gill | 236 |
| A.61 | Roi-Namur to Hawaii, King Fish | 238 |
| A.62 | Roi-Namur to Kauai, King Fish | 240 |
| A.63 | Canton to Fairbanks, King Fish | 242 |
| A.64 | Canton to Midway, King Fish | 244 |
| A.65 | Kauai to Wake, King Fish | 246 |
| A.66 | Kauai to Midway, King Fish | 248 |
| A.67 | Canton to Hawaii, King Fish | 250 |
| A.68 | Canton to Wake, King Fish | 252 |
| A.69 | Canton to Viti Levu, King Fish | 254 |
| A.70 | Canton to Tutuila, King Fish | 256 |
| A.71 | Canton to Rarotonga, King Fish | 258 |
| A.72 | Roi-Namur to Tutuila, King Fish | 260 |
| A.73 | Roi-Namur to Viti Levu, King Fish | 262 |
| A.74 | Roi-Namur to Rarotonga, King Fish | 264 |
| A.75 | Roi-Namur to Midway, King Fish | 266 |
| A.76 | Kauai to Tutuila, King Fish | 268 |
| A.77 | Roi-Namur to Palo Alto, King Fish | 270 |
| A.78 | Okinawa to Hawaii, King Fish | 272 |
| A.79 | Canton to Palo Alto, King Fish | 274 |
| A.80 | Kauai to Fairbanks, King Fish | 276 |
| A.81 | Kauai to Rarotonga, King Fish | 278 |
| A.82 | Roi-Namur to Wake, King Fish | 280 |
| A.83 | Roi-Namur to Fairbanks, King Fish | 282 |

| | |
|-------------------------------------------|-----|
| A.84 Kauai to Palo Alto, King Fish----- | 284 |
| A.85 Okinawa to Tutuila, King Fish----- | 286 |
| A.86 Roi-Namur to Hawaii, Tight Rope----- | 288 |
| A.87 Roi-Namur to Kauai, Tight Rope----- | 290 |
| A.88 Canton to Midway, Tight Rope----- | 292 |
| A.89 Roi-Namur to Hawaii, Housatonic----- | 294 |
| A.90 Roi-Namur to Kauai, Housatonic----- | 296 |
| A.91 Canton to Midway, Housatonic----- | 298 |

FIGURES

| | |
|-------------------------------------------------------------------------------------------------------|----|
| 1.1 NBA receiver sites for Fish Bowl, showing great-circle propagation paths----- | 25 |
| 1.2 18-kc-system block diagrams----- | 26 |
| 1.3 Rustrak strip-chart records of 18-kc signal----- | 27 |
| 1.4 Polar plot of phasor variation on 7 October at Canton----- | 28 |
| 1.5 Processed data plot form----- | 29 |
| 1.6 Diurnal amplitude and phase comparison plots for four consecutive days in July at Okinawa----- | 30 |
| 2.1 Diurnal amplitude and phase at Palo Alto and Midway, Star Fish----- | 43 |
| 2.2 Diurnal amplitude and phase at Kauai and South Point, Star Fish----- | 44 |
| 2.3 Diurnal amplitude and phase at Viti Levu, Star Fish----- | 45 |
| 2.4 Amplitude and phase detail at Viti Levu and South Point, Star Fish----- | 46 |
| 2.5 Amplitude and phase detail at Kauai and Tutuila, Star Fish----- | 47 |
| 2.6 Amplitude and phase detail at Canton and Wake, Star Fish----- | 48 |
| 2.7 Amplitude and phase detail at Roi-Namur and Midway, Star Fish----- | 49 |
| 2.8 Amplitude and phase detail at Palo Alto, Star Fish----- | 50 |
| 3.1 Diurnal amplitude and phase at Okinawa and Midway, Check Mate----- | 65 |
| 3.2 Diurnal amplitude and phase at Kauai and Tutuila, Check Mate----- | 66 |
| 3.3 Diurnal amplitude and phase at Canton, Check Mate----- | 67 |
| 3.4 Diurnal amplitude and phase at Viti Levu, Check Mate----- | 68 |
| 3.5 Amplitude and phase detail at Canton and Midway, Check Mate----- | 69 |
| 3.6 Amplitude and phase detail at Okinawa and Kauai, Check Mate----- | 70 |
| 3.7 Amplitude and phase detail at South Point and Wake, Check Mate----- | 71 |
| 3.8 Amplitude and phase detail at Rarotonga and Palo Alto, Check Mate----- | 72 |
| 3.9 Amplitude and phase detail at Tutuila and Viti Levu, Check Mate----- | 73 |
| 3.10 Amplitude and phase detail at Roi-Namur, Check Mate----- | 74 |
| 4.1 Diurnal amplitude and phase at Okinawa, Blue Gill----- | 88 |
| 4.2 Diurnal amplitude and phase at Palo Alto and Wake, Blue Gill----- | 89 |
| 4.3 Diurnal amplitude and phase at Kauai and South Point, Blue Gill----- | 90 |
| 4.4 Diurnal amplitude and phase at Roi-Namur and Tutuila, Blue Gill----- | 91 |

| | | |
|-----|--------------------------------------------------------------------------|-----|
| 4.5 | Amplitude and phase detail at Tutuila and Okinawa, Blue Gill----- | 92 |
| 4.6 | Amplitude and phase detail at Roi-Namur and Viti Levu, Blue Gill----- | 93 |
| 4.7 | Amplitude and phase detail at Palo Alto and Wake, Blue Gill----- | 94 |
| 4.8 | Amplitude and phase detail at Kauai and South Point, Blue Gill----- | 95 |
| 4.9 | Amplitude and phase detail at Midway, Blue Gill----- | 96 |
| 5.1 | Diurnal amplitude and phase at Wake, King Fish----- | 108 |
| 5.2 | Diurnal amplitude and phase at Kauai and South Point, King Fish----- | 109 |
| 5.3 | Diurnal amplitude and phase at Viti Levu, King Fish----- | 110 |
| 5.4 | Amplitude and phase detail at Fairbanks and Viti Levu, King Fish----- | 111 |
| 5.5 | Amplitude and phase detail at South Point and Kauai, King Fish----- | 112 |
| 5.6 | Amplitude and phase detail at Roi-Namur and Tutuila, King Fish----- | 113 |
| 5.7 | Amplitude and phase detail at Wake, King Fish----- | 114 |

PART 2

18-KC PHASE AND AMPLITUDE (U)

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CHAPTER 1

INTRODUCTION

One of the most sensitive measures of a change in electron content in the lowest portions of the ionosphere is the received phase of a VLF signal. Such measurements have been used for years to monitor sudden ionospheric disturbances (SID) in the lower ionosphere. Phase differences equivalent to a change of a few electrons per cm³ or an effective ionospheric height change of less than 1 km can be detected.

Project 6.11 had, as a requirement, a frequency standard with stabilities of the order of a few parts in 10^{10} to be used as a time signal source at each terminal in the HF sounder program. These standards were kept on frequency by monitoring the 18-kc time-and-frequency-standard signal radiated from the U.S. Navy Transmitting Station, NBA, Balboa, Canal Zone. To synchronize the local-standard frequency with the 18-kc signal from NBA, the received phase of NBA was compared on a day-to-day basis with the local standard. Corrections to the local standard were made manually, based on several days' measurements. The system required for recording the received phase of NBA also contains data on the change in phase at the time of the Fish Bowl events. This report describes these measurements.

Twelve sites in the Pacific basin were installed under Project 6.11 to monitor the phase and amplitude of NBA signal. These sites and the great-circle distance from NBA to each site are shown in

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frequency standard. Since the IF inputs to the two synchronous detectors were in quadrature, the outputs, called X and Y, were:

$$\text{Output X} = A \sin \phi$$

$$\text{Output Y} = A \cos \phi,$$

where A was proportional to the amplitude of the incoming NBA signal and ϕ was the phase angle between the incoming NBA signal and the local standard, this phase comparison being made at 2 kc in this particular design.

The two outputs were recorded on two¹ sets of dc amplifiers and simple Rustrak recorders. One set of recorders ran continuously at 3 inches per hour; the other set ran at 9 or 18 inches per hour at times of interest. Calibration was accomplished by injecting a signal at a frequency within $1/2$ cps² of the signal from NBA and recording the peak-to-peak deviation on each of the two recorder channels. This peak-to-peak deviation represents twice the input amplitude. This calibration procedure was used at three signal levels to ensure

¹Only one set of recorders is shown in Figure 1.2. At some sites, two-track recorders were used and at others two single-track recorders were used for each set.

²During normal operation, detector time constants of 2 to 4 seconds were used. During calibration, a time constant of 0.1 second was used, thus requiring the calibration signal to be within $1/2$ cps of the system center frequency.

linearity and equal gain through the system for both the X- and Y- outputs. Absolute field-strength measurements were not attempted, although measurements were made on the antenna and pre-amplifier that could be used to determine field strength.

The output records for 3-inch-per-hour recording speed are shown in Figure 1.3. The upper two records are the output recordings from a single-track recording system (two recorders per set); the lower record is from a dual-track recording system. Figure 1.3 shows several features pertinent to the phase and amplitude recording system. NBA transmits a 0.3-second pulse each second, with some missing pulses toward the end of each hour for identification of time. With the 2- to 4-second time constant in the system, the average amplitude (approximately 0.3 of the peak-pulse amplitude) is displayed on the recorder. From 4 to 7 minutes past each hour, NBA radiates a continuous signal. This key-down signal shows as a pulse each hour on the records in Figure 1.3. Following the key-down, no signal is transmitted from 7 to 10 minutes past each hour. This key-up gives a zero input following each key-down. By using the key-up level as zero, the amplitudes at the key-down periods can be seen to vary both positively and negatively. This change in signal polarity is caused by a changing phase between the incoming NBA signal and the local frequency standard.

The amplitude and phase data shown in the upper two graphs of Figure 1.3 can be separated as shown in Figure 1.4, which is an

orthogonal plot of the X and Y-outputs of the key-down times. The amplitude, A, which is the distance from the origin to the point X, Y, is

$$A = (X^2 + Y^2)^{1/2}.$$

The phase, Φ , which is the angle from the positive X axis to the vector to the point X, Y, is

$$\Phi = \tan^{-1} \frac{Y}{X}.$$

The hourly values of X and Y obtained from the key-down signals are shown in Figure 1.4 along with a smooth curve through the points and represent the phase-amplitude behavior of the two records shown at the top in Figure 1.3. No identification sequence was recorded at 1100 GMT on 7 October. In such cases, the signal was read with respect to a line through the zero levels on either side, and magnitudes were adjusted in the ratio of $\frac{10}{3}$ to correspond to the other data. For normal data processing, calculations of A and Φ were made without the visual display shown in Figure 1.4. For records whose calibrations showed a difference of over 10 percent in recorded amplitude between X and Y, Y was normalized to X before calculating A and Φ .

Data to provide background information were read continuously from the records gathered between 1 July and mid-November, wherever possible. Readings were taken from the hourly periods of continuous-wave signal and referenced to the zero level immediately following, in the transmitter sequence (see Figure 1.3); magnitudes were read in the arbitrary units printed on the record tapes. The traces were

examined in the intervals between readings to determine direction of phase variation. These quadrature-component readings were then converted to phase and amplitude, and plots were made showing phase angle (containing both propagation-phase variations and local-oscillator drift) vs. Greenwich Mean Time (GMT) for consecutive diurnal periods. Figure 1.5 shows such a plot of phase in the upper graph.

In order to compare diurnal phase variations between respective days, it was necessary to remove from the phase data the average oscillator drift-slope for each day. This was done by assuming that ionospheric conditions would be repeatable during the hours near midpath midnight (0905 GMT for the data shown in Figure 1.5) and by connecting the phase points at this time on each consecutive day by a straight line (see Figure 1.5, upper curve). Theoretically, such lines should be chords between points on a parabolic arc representing oscillator output, in cycles, vs. time; but as there is some ionospheric effect at midpath midnight (especially over the northern paths in summer), this method gives only a first approximation of the average drift-slope over each day. Whenever anomalies occurred in any diurnal period (e.g., long off-periods, changes to receiver equipment, or nuclear-test events), the method followed in establishing slopes for that period was to bypass the affected day and re-establish slope variation on the first day following for which complete data were available. It was usually possible to extrapolate backward and forward in time well enough to estimate slope behavior, unless the oscillator drift was high (12 cycles per day or more).

Whenever it could be discerned that adjustment had been made to the frequency standard that was used as the local oscillator for the NBA receiver, a new slope-variation pattern was sought and established, if possible, in the phase data for the subsequent period. It was assumed that no other occurrence could cause a change in the pattern of daily drift-slope variation.

In the case of nuclear test events, it was always possible to work backward in time to establish a reasonable drift-slope variation through the affected day, provided data existed. In many cases, this meant assuming that a one-cycle phase advance occurred shortly after the event, too rapid to be shown by the data system. Whenever an event occurred in close proximity to and ahead of the midnight phase point, points prior to H-hour were used to orient the drift-slope, unless the average of the background phase-characteristic curves indicated that such a procedure was invalid. In the latter case, and when midnight points were taken a number of hours after H, a 2-day average was used to estimate the slopes for the days affected.

Once drift-slope variation had been established for a number of consecutive days, normalized curves of the diurnal phase variation from midpath midnight to midpath midnight were drawn, by plotting the difference between the raw phase points and the average drift-slope at each hour of the day. Diurnal plots of phase, as shown in the lower curve of Figure 1.5, were made for each path, giving a good indication of the average diurnal phase-characteristic curve. A typical diurnal-phase plot is shown in the

lower curve of Figure 1.6. The spread in phase values at a number of different times of day throughout this diurnal phase plot gives an idea of the validity of assuming repeatable ionospheric effect at midpath midnight. Amplitudes were also compared in this manner, as shown by the upper curves in Figure 1.6. The gaps in the curves are periods for which no usable data were obtained. Such plots, showing days before, after, and including events were made for this report. Amplitudes sometimes appear on these plots without corresponding phase data; phase was considered invalid in such cases because of extremely low signal or because of recent oscillator adjustments.

Records were read in more detail at periods near event time, in order to facilitate establishment of drift-slope variations and to show the post-event phase variations that were resolved by the system. These phase points were added to the raw data curves. By following phase variation backward in time, then, evidence of a recovery from some advanced phase-shift position was apparent in many instances. If, in such cases, drift-slope variation through the period affected by the event could only be made to fit the proper oscillator-drift pattern by assumption of a large post-event phase advance, the phase-characteristic curves were adjusted accordingly, and the shift was incorporated into the raw data at

H + 0 minutes.³

Plots of raw phase detail were then made on an expanded time scale, normalized to the drift-slopes established as discussed above, and compared to the diurnal phase curves for the period immediately surrounding the time of the event. Whenever the normalized diurnal phase characteristics taken within a week of the event showed an average grouping for the hours of interest (H - 1 to H + 3 hours), a median curve was selected. The difference between this median background curve and the normalized phase-detail curve for the event was then plotted, to show the deviation in phase from normal caused by the event. These phase-deviation curves are not labeled as such; any detail phase curve that is unlabeled represents the change from normal phase variations that is caused by the particular event. In a few instances, it was possible to establish reasonable drift-slope variation in spite of irregular appearance of the diurnal characteristic curves, but comparison of event effects

³ Important Note: The terms H - 0 and H + 0 minutes, used throughout this report, refer to the last point of a record trace recognizable as being before the event and to the first point that is definitely after the event, respectively. The average response time of the data system used was near 0.2 minute, so that data correlate within about ±0.2 minute among the records from the different sites and within about ±0.1 minute of real time in each separate instance.

with background curves did not seem valid because of such irregular behavior. Such phase-detail data are shown with the local standard drift removed and are labeled "Normalized Phase." A third class of detail phase curves is presented. These represent periods for which very few data other than those showing the immediate effects of the event are available, so that it was not possible to establish a drift-slope for the day of the event. These curves, showing data based on the minimum of evidence in the form of the data obtained directly from the X- and Y-records, are labeled "Raw Phase." When a phase advance is shown on one of the Raw Phase detail plots, it has usually been inserted by the analyst in lieu of his other choice: that of showing a retardation in phase caused by the event. Readers should be cautious of accepting these as representing evidence on a par with other data presented, although there are a few exceptions which will be explained in the discussion of the events.

Diurnal amplitude data and detailed amplitude data without normalization are shown for each event. Key-down values are reduced to 0.3 amplitude for direct comparison with non-key-down data. The amplitude data are presented to show the change in amplitude, and not absolute values.

The data-reduction method outlined above was used to obtain background data for the entire period 1 July through 16 November 1962 and to obtain more detailed data showing variations, if present, through the event times indicated in Table 1.1. If records taken at

event time showed no abnormal variation, detailed investigation was not made, but drift-slope variation was checked for consistency. The results obtained for the periods of interest are presented in the following sections, in the order of events shown in Table 1.1.

The discussion of results assumes the following general approach:

- (1) Diurnal Amplitude data are presented for a number of days in the event-related period. Scales are shown with each of these curves, but they are relative to individual system parameters, and should not be used for any quantitative comparison between sites or events.
- (2) Diurnal Phase data are presented for the same period as amplitude data. The phase curves have been normalized to the daily average oscillator drift-slope to allow comparison; the scales, in radians, are oriented to the drift-slope as zero. Phase advance is shown in a negative direction.
- (3) Amplitude Detail is presented for a 140-minute period at event time. Scales shown are the same as those shown for diurnal amplitude data. Variations in the data are discussed in reference to pre-event conditions, with the pre-event level called unity.
- (4) Detailed Phase data are also presented for the 140-minute period at event time. In discussion of details, phase changes are described in reference to pre-event conditions, that is, the change in radians from pre-event value. The scale, in

radians, has an arbitrary zero reference; phase advance is shown as a negative shift. Phase detail plots are shown in one of three forms:

- (a) Phase Deviation represents the difference between the event data and an average of the characteristic curves during the event-related period. Strict comparison cannot usually be made between these curves and the diurnal phase curves for the same period. These plots represent phase change with respect to average background. They are not labeled in the figures.
- (b) Normalized Phase plots have been used when deviation comparisons could not be made. These curves represent data in the same form as used in the diurnal phase plots and are labeled.
- (c) Raw Phase data, presented when no usable background data was obtained, are shown to demonstrate the presence of event effects. Variation in these curves includes the oscillator drift.

TABLE 1.1

FISH BOWL EVENT NAMES AND TIMES

| <u>Name</u> | <u>Date</u> | <u>Time</u> GMT |
|-------------|-------------|-----------------|
| Star Fish | 9 July | 0900:09 |
| Check Mate | 20 October | 0830:00 |
| Blue Gill | 26 October | 0959:48 |
| King Fish | 1 November | 1210:06 |
| Tight Rope | 4 November | 0730:00 |

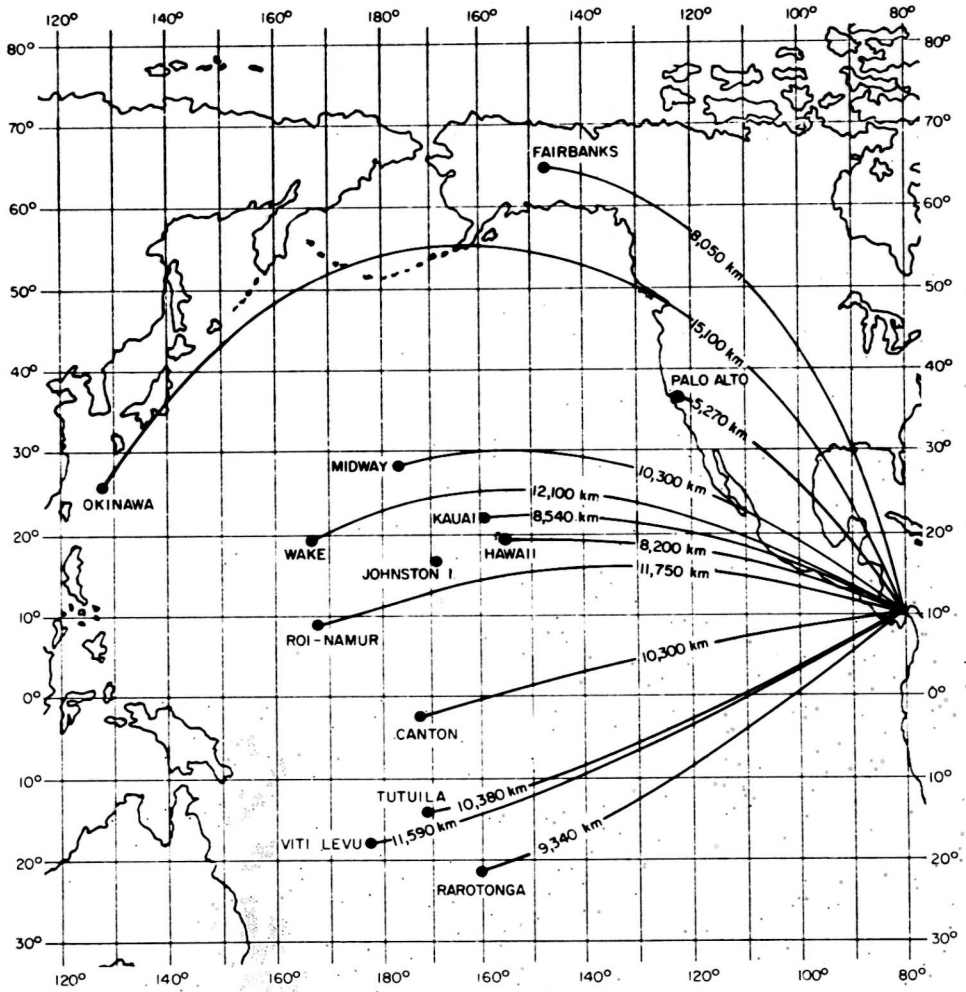


Figure 1.1 NBA receiver sites for Fish Bowl, showing great-circle propagation paths.

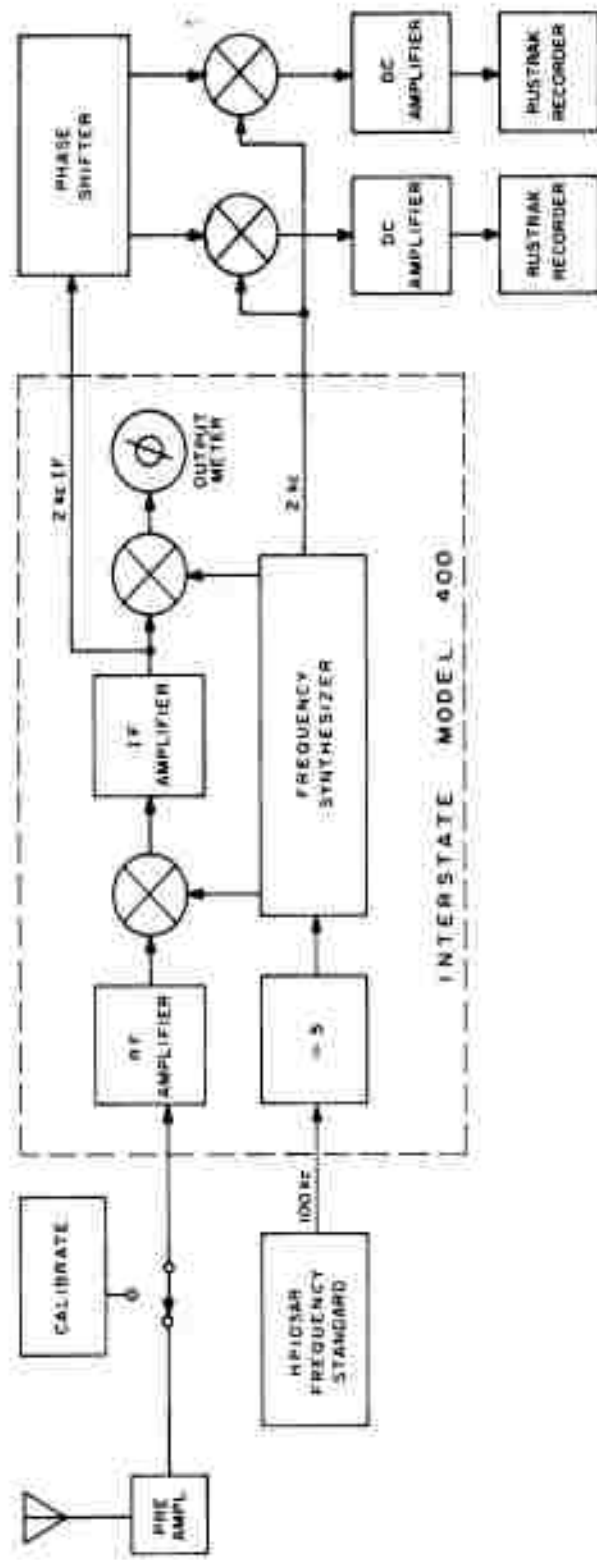
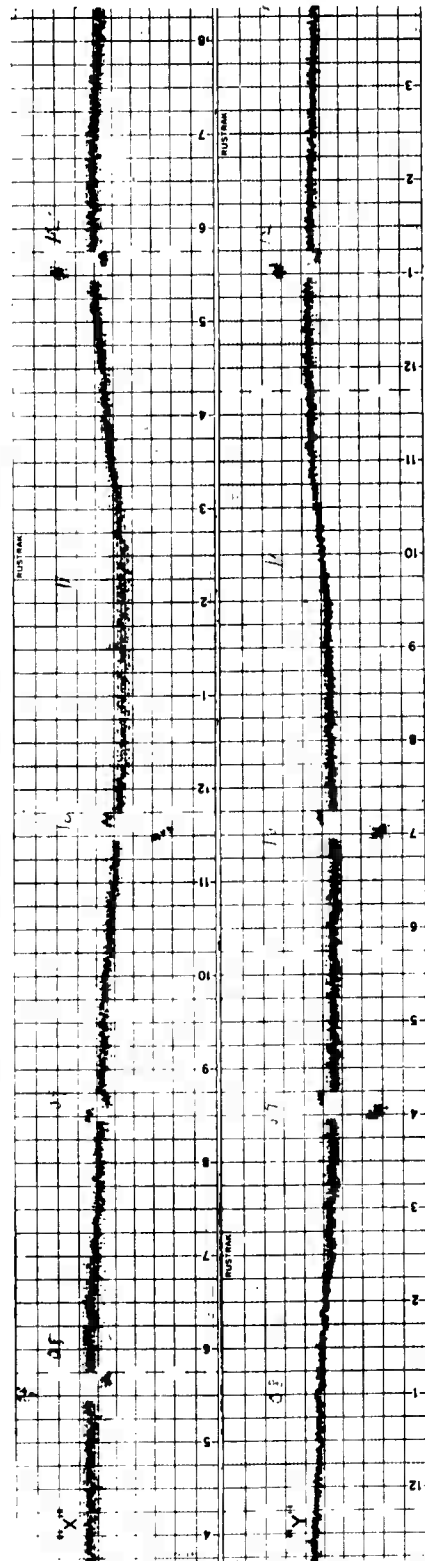


Figure 1.2 18-kc-system block diagrams.

CANTON 7 OCTOBER 1962 0800 - 1200 GMT



ROI-NAMUR 1 NOVEMBER 1962 0100 - 0600 GMT

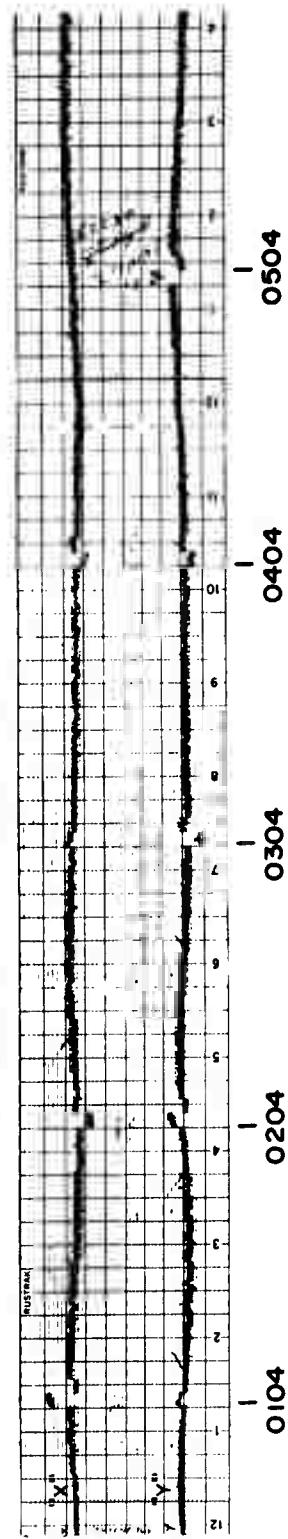


Figure 1.3 Rustrak strip-chart records of 18-kc signal.

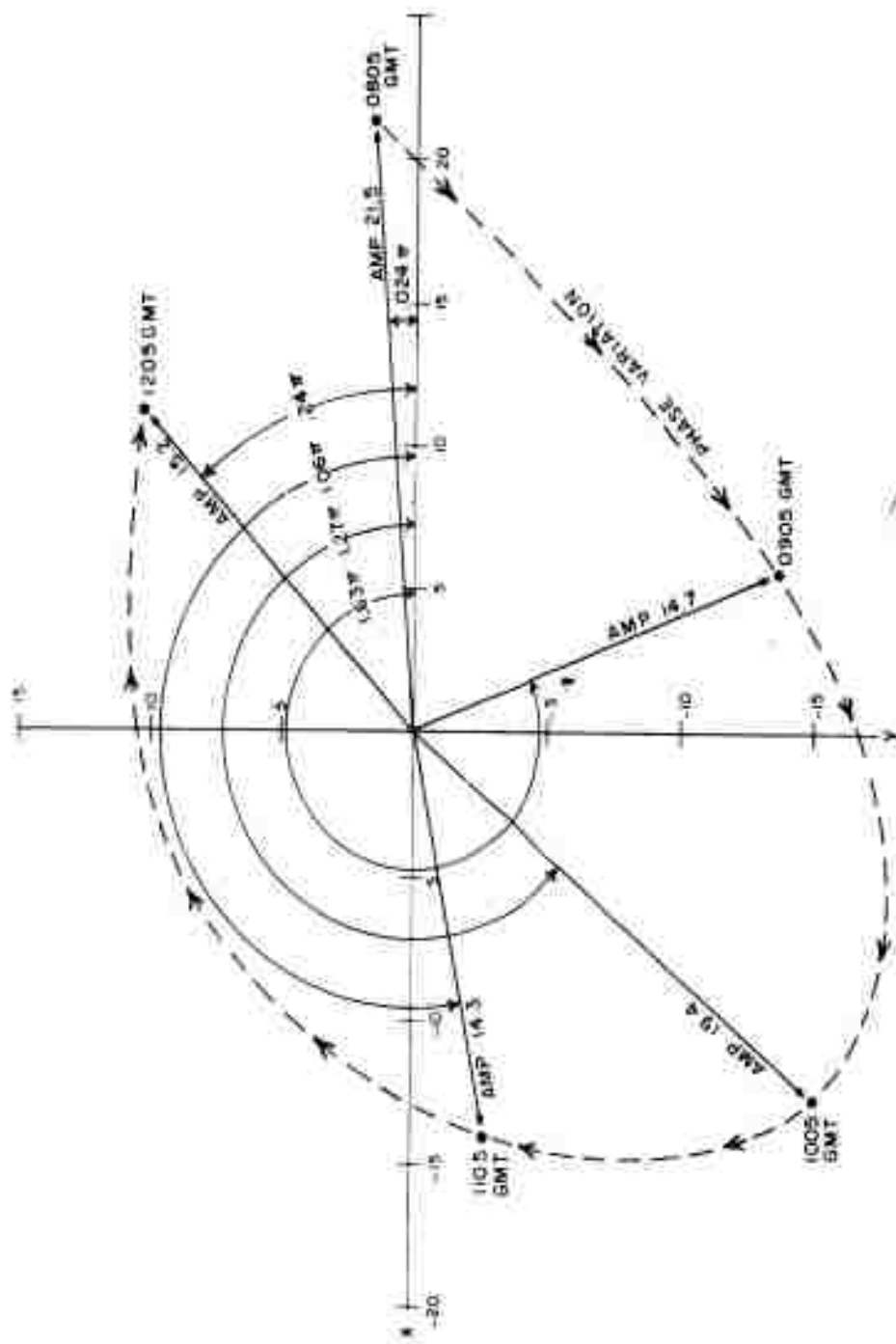


Figure 1.4 Polar plot of phasor variation on 7 October at Canton.

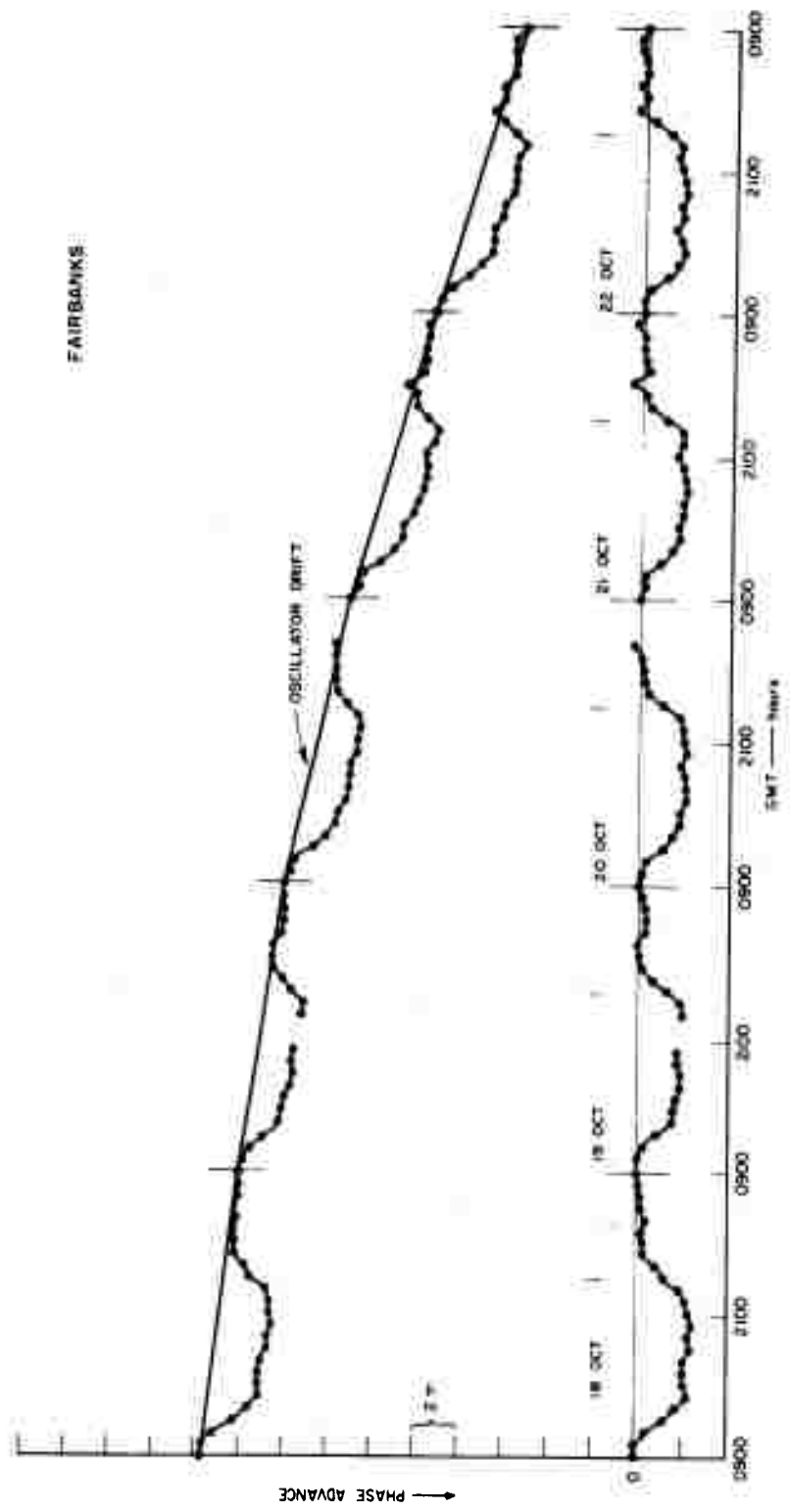


Figure 1.5 Processed data plot form.

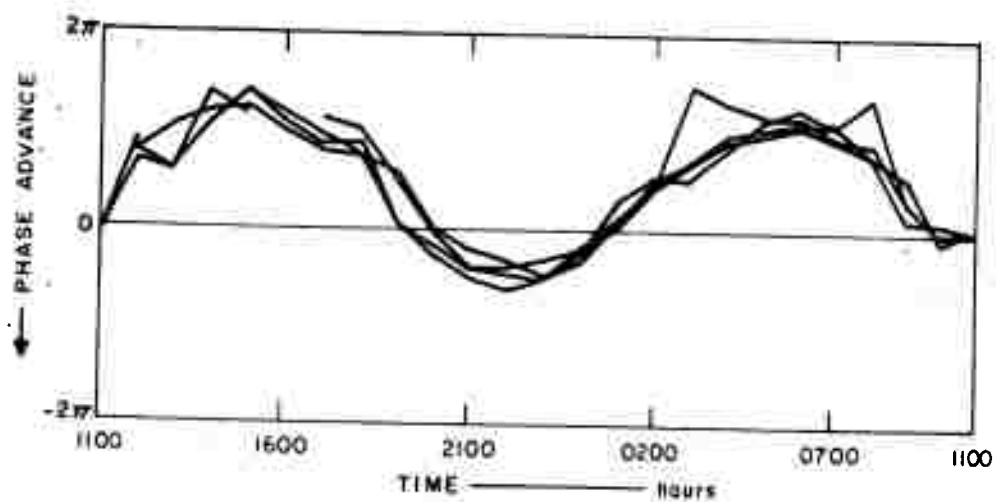
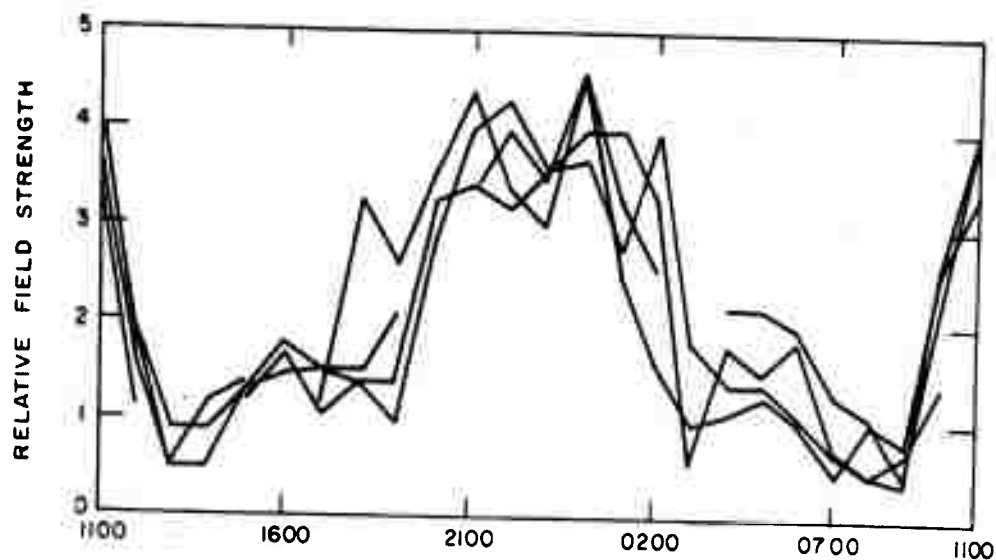


Figure 1.6 Diurnal amplitude and phase comparison plots for four consecutive days in July at Okinawa.

CHAPTER 2

STAR FISH

2.1 GENERAL

For the Star Fish event on 9 July 1962, records were obtained at all sites shown in Figure 1.1 except Fairbanks, Okinawa, and Rarotonga. Data were obtained at the remaining nine sites, with all sites noting effects of the event. Figures 2.1, 2.2, and 2.3 show diurnal phase and amplitude data; Figures 2.4 through 2.8 show phase and amplitude details from 20 minutes before until 2 hours after the event. (Figures are given at the end of the section. The order of presentation has no significance.)

The Star Fish event occurred at 0900:09 GMT on 9 July 1962. Ground sunrise at NBA was at 0949 GMT, so that for some 50 minutes after the event all paths were in darkness. From 0904 to 0907, NBA transmitted a CW signal, then was off from 0907 to 0910, a sequence repeated at hourly intervals. For the remaining time, NBA was transmitting time pulses with a 0.3 duty cycle.

2.2 PALO ALTO

The diurnal amplitude and phase variations of the NBA signal as received at Palo Alto are shown in Figure 2.1 (top). Three consecutive days about the event day are represented. For the NBA-to-Palo Alto path, midnight was taken to be at 0800 GMT, about one hour late. The amplitude curves show good conformity with a slight diurnal variation,

being higher through the morning hours. The spread at 1300 is unexplained; however, ground sunrise at Palo Alto occurs at about 1300 GMT. On the day of the event, amplitude was slightly high just prior to the event, was attenuated significantly at event time, recovered to normal within a few minutes, and remained essentially normal throughout the day.

The diurnal phase curves show fairly close conformity if the phase change at the event is assumed to be as shown. The curve for 10 through 11 July is close to an average for the period near the event. The event-day phase curve does not deviate significantly from normal except for the period H to $H + 30$ minutes, when it undergoes an abnormal advance. The diurnal phase data shown in Figure 2.1 tend to indicate that the midday change in phase is reduced on event day and has partially returned on the following day. However, the data at Palo Alto for Star Fish are very limited, and such conclusions must be doubted.

Phase deviation and amplitude details at Palo Alto are shown in Figure 2.8 for the period around event time. An erratic variation occurs in both curves just prior to H (event time); this is probably attributable to noise. In terms of average amplitude level prior to H , the amplitude curve shows immediate attenuation to 0.5 at H , and further rapid decrease to 0.25 at $H + 0.5$ minute. An immediate increase follows, before $H + 1$ minute, to a comparative level of 0.5; there is another decrease from that point at $H + 1.5$ minutes to 0.25

of the pre-event level. This second minimum in the amplitude corresponds to the rapid phase advance crossing zero, as shown on the phase-deviation curve. Amplitude level then increases very rapidly to 0.75 at H + 4 minutes, where constant level is maintained through H + 1 hour. There is a slight increase by H + 2 hours. The signal amplitude is essentially at normal level after H + 10 minutes.

The phase-deviation curve shows an apparent slow retardation from H to H + 1.5 minutes of about 0.1π . At H + 1.5 minutes, an immediate advance of 0.3π occurs, and continues to 0.6π by H + 4 minutes. After the off-period, phase is recovering from 0.7π at H + 10 minutes to normal by H + 1 hour, at a gradual rate.

2.3 MIDWAY

The diurnal phase and amplitude data for NBA as received at Midway are shown in Figure 2.1 (bottom) for three consecutive days about the event. Midpath midnight is at 0800 GMT. Both the amplitude and phase curves show consistent agreement in diurnal variation, though data are sparsely distributed. The amplitude curve for 9-10 July (event day) averages higher than normal for the hour before the event. There is a large attenuation at H, immediate partial recovery, another period of attenuation near H + 30 minutes, and recovery to normal level near H + 1 hour; then, signal level follows diurnal variation for the remainder of the day.

The phase curve for 9-10 July had been oriented to show an advance of almost one cycle at H, bringing the curve into near coinci-

dence with the background by H + 3 hours, and showing close correspondence with the normal diurnal variation for the remainder of the day. Sunrise effect predominates over event effect by H + 2.5 hours.

Details of phase deviation and amplitude around Star Fish event time at Midway are shown in Figure 2.7. Referenced to the pre-event level, amplitude shows an attenuation to 0.5 immediately at H; it decreases further to less than 0.1 at H + 1 minute, and to about 0.05 at H + 2 minutes. There is a general increase to about 0.5 at H + 6 minutes, where the level remains until after H + 13 minutes. Gradual attenuation to 0.2 at H + 25 minutes follows; then, signal level increases slowly toward 0.9 at H + 2 hours. Recovery to normal level has essentially occurred by H + 1.5 hours.

The phase-deviation curve in Figure 2.7 shows an advance of 1.8π at H, and rapid recovery from there to about 1.0π at H + 13 minutes. Recovery is checked at 1.0π until H + 25 minutes, then continues gradually through 0.8π at H + 1 hour and 0.6π at H + 2 hours, becoming complete by about H + 3 hours.

2.4 KAUAI

The diurnal phase and amplitude data for three consecutive days about the Star Fish event time for Kauai are shown in Figure 2.2 (top). The curves show good agreement in both cases, except for a few hours of the day. Midpath midnight is taken as occurring at 0900 GMT. Diurnal effects shown in the amplitude data are slight, with the signal exhibiting greater variations during the hours of darkness.

The event-day amplitude curve shows large attenuations at H and H + 30 minutes with apparent recovery between, and low signal, on the average, from H to H + 3 hours. There is considerable scattering of the readings in the interval H + 1 to H + 5 hours.

Phase points on the event-day curve are scattered following the event. The phase advance of event time persists until the sunrise effect at about H + 4 hours. The phase variation approaches normal by H + 6 hours, although it appears to show some advance over normal until H + 14 hours.

Figure 2.5 shows details of phase deviation and amplitude through the Star Fish event at Kauai. With respect to the pre-event level (average), the amplitude undergoes attenuation to about 0.5 at H; at H + 2 minutes it increases rapidly, reaching about 1.0 by H + 4 minutes, then continues more gradually until it reaches 1.15 by H + 7 minutes. From H + 10 minutes, when signal reappears, until H + 30 minutes, the level drops from 1.0 to 0.4, then rises gradually, on the average, through H + 2 hours.

The initial phase advance appears to be in two stages: Immediately at H, the phase advances by 0.8π ; there is a pause there for about 1 minute; then another rapid advance follows, to 1.4π at H + 4 minutes. This second phase advance is accompanied by the amplitude increase at H + 2 minutes. There is a gradual recovery, starting at H + 2 minutes, to a phase advance of 0.8π at H + 25 minutes. Another advance follows to 1.2π at H + 40 minutes; final recovery begins from there, appearing very gradually.

2.5 SOUTH POINT

The diurnal phase and amplitude variation of NBA as received at South Point is shown in Figure 2.2 (bottom) for three consecutive days about the Star Fish event. Midpath midnight is at 1000 GMT. Amplitude on event day shows a large attenuation, and a final recovery in the first 3 hours after the event. The average during this time is below the diurnal trend of the background signal amplitude; it becomes quite high, compared to the background, between $H + 3$ and $H + 7$ hours, apparently an enhancement of sunrise effect. Signal level begins to follow the usual diurnal trend by about $H + 12$ hours, but the spread in data makes the time indefinite.

The diurnal phase curves show closer grouping; a phase advance is evident from H to $H + 11$ hours, obscuring the normal sunrise effect. Data are missing from $H + 15$ to 24 hours, but conditions seem normal both before and after that period.

Details of amplitude and phase deviation near event time for South Point are shown in Figure 2.4. With reference to the average value before H as unity, amplitude decreases abruptly at H to about 0.3, returns more gradually to about 1.0 by $H + 7$ minutes, and decreases gradually from 1.0 at $H + 10$ minutes to 0.15 by $H + 1$ hour, when final recovery begins.

The initial phase change seems to be in two stages; Phase deviation advances by about 1.2π by $H + 1$ minute, pauses there for 1 minute, then shows a further advance to 1.8π at $H + 3$ minutes. This position

is held until $H + 5$ minutes; then, there is a gradual recovery to 1.4π at $H + 40$ minutes, another advance to 1.8π by $H + 70$ minutes (too early to be sunrise effect), and a very slow final recovery lasting from then until $H + 11$ hours.

2.6 VITI LEVU

The diurnal variations of phase and amplitude are shown in Figure 2.3 for three days about the event at Viti Levu. The day after event is not shown: the data were very doubtful, showing a reversed phase characteristic. Midpath midnight is at 1000 GMT. The amplitude data are so spread that no diurnal variation is readily apparent. The amplitude curve around the time of the event is below the expected level. At event time, there is a sudden attenuation and an early return to about the pre-event level. There is attenuation again at about $H + 3.5$ hours; this may be sunrise effect.

The diurnal phase curves show more conformity than do the amplitude curves, but much scattering is evident. In the phase curve for 9 July, an advance of one cycle has been inserted at H to establish a consistent local-standard drift-slope. The deviation from H until $H + 4$ hours is considerable, obscuring any diurnal effect. Phase does not return to its normal diurnal characteristic until about $H + 10$ hours.

Phase deviation and amplitude details at Viti Levu are shown in Figure 2.4. With the pre-event average level as a reference, the signal amplitude shows attenuation to 0.4 by $H + 0.5$ minute, with a further

drop at H + 1 minute, reaching a minimum of about 0.2 by H + 4 minutes. By H + 15 minutes a comparative level of about 0.75 is reached. This approximate level is maintained toward H + 2 hours, with a rising trend then becoming apparent.

Phase change is in three stages, apparently. There is a phase advance of 2.6π immediately after H, pausing there for 0.5 minute, then a very rapid phase advance to a total of 3.2π at H + 1 minute, followed by another 0.5-minute pause, and finally a rapid advance to a total of 3.5π at H + 4 minutes. There is a rapid recovery between H + 4 and H + 7 minutes, to 2.6π . At H + 10 minutes, there is a gradual advance, reaching 2.9π by H + 40 minutes, followed by a slight recovery at H + 50 to 65 minutes and a gradual advance lasting until H + 5 hours.

2.7 TUTUILA

Diurnal variation is not shown because of the many gaps in the data. Fortunately, there was good agreement for the hours around the event, so that comparison could be made for the detail curve of phase deviation. Phase deviation and amplitude details for Tutuila are shown in Figure 2.5. The phase curve shows an advance of 1.2π at H, a slight recovery to 1.1π between H + 7 and H + 15 minutes, a gradual advance to 1.4π by H + 45 minutes, and a very slow recovery from that point, remaining at almost constant deviation through H + 2 hours. Recovery is apparently complete by H + 7 hours.

Amplitude changes, referenced to the pre-event average, show an attenuation to 0.35 between H and H + 1 minute, a gradual decrease to 0.15 by H + 5 minutes, a very slow recovery from 0.35 at H + 10 minutes, reaching normal level by H + 65 minutes, after which the curve follows the normal diurnal variation.

2.8 CANTON

For the Star Fish event, data on the received signal from NBA at Canton were very sketchy, so that diurnal behavior and local standard drift could not be determined. Amplitude and raw phase details are shown in Figure 2.6. Referenced to the pre-event average level, the amplitude curve shows attenuation immediately at H, to 0.3, drops to less than 0.1 at H + 1 minute, returns to 0.3 at H + 3 minutes, and falls again to 0.15 at H + 5 minutes. There is a gradual increase to 0.4 by H + 55 minutes, after which data were lost until H + 90 minutes. Signal is at the same level when next seen, and rises to about 1.0 by H + 2 hours, this being approximately the pre-event signal level.

The phase does not advance appreciably until H + 1 minute. The H + 0 reading that corresponds to the sudden signal attenuation, indicates a 0.04π retardation. A rapid advance of 1.6π is recorded at H + 1 minute. (These phase data are assumed to be an advance, otherwise the data would show phase retardation of 0.4π .) Rapid partial recovery is shown, to 1.2π at H + 3 minutes, followed by a continuously advancing phase to more than 2π by H + 1 hour. After

the break in signal recording, phase was apparently beginning to recover, but was still advanced by more than 2π .

2.9 WAKE

At Wake, there were several local-frequency-standard adjustments a few hours prior to the Star Fish event, so at event time the local standard was too unsettled to allow a reasonable estimate of drift-slope. The slope is only known to be positive, and is probably less than 0.2π radian per hour. Therefore, the phase data from NBA recorded at Wake are presented in raw-phase form. Details of amplitude and raw phase are shown in Figure 2.6.

The phase of NBA shows a very rapid advance of 0.5π from H to H + 1 minute, very slight recovery between H + 11 and H + 12 minutes, to about 0.2π , then gradual recovery from H + 12 minutes through H + 2 hours. It is impossible to tell when phase returns to normal in these data, but it has certainly done so by no later than H + 7 hours and possibly as soon as H + 1 hour.

In terms of the level prior to H, amplitude decreases immediately at H, by H + 1 minute has reached 0.25, where it remains until H + 4 minutes, then increases slightly to about 0.3 at H + 7 minutes. The level is seen to be decreasing gradually after the off-period (H + 10 minutes) to a minimum of 0.1 at H + 40 minutes. Thereafter, the average level remains low until H + 7 hours.

2.10 ROI-NAMUR

The phase deviation and amplitude detail data from Roi-Namur are shown in Figure 2.7. The background phase-characteristic curves for the week of the event are very irregular throughout most of the day, showing phase to be retarded at noon in some cases. The drift-slope variation is reasonable, however, and the background is consistent for about 4 hours either side of midpath midnight (0900 GMT), so that it was possible to arrive at phase deviation for the detail-phase curve.

Amplitude variation, relative to the average pre-event level, shows attenuation at $H + 0$ to 0.15, remaining constant at that level from $H + 0$ to $H + 3$ minutes. There is a return in amplitude to 0.5 by $H + 7$ minutes. A rather slow decrease begins at about $H + 25$ minutes, to about 0.3 by $H + 45$ minutes. The low level near 0.3 is maintained as an average until $H + 5$ hours, but there are a number of fades between $H + 2$ and $H + 5$ hours. Signal appears normal by $H + 6$ hours.

Phase deviation advances by 2π at H , then remains essentially constant until $H + 7$ minutes, and has not changed appreciably after the off-period. Partial recovery starts at $H + 16$ minutes, returning to 1.6π at $H + 20$ minutes. After $H + 25$ minutes, the phase gradually returns to normal by $H + 5$ hours.

2.11 SUMMARY

The NBA phase and amplitude recordings at nine sites during the Star Fish event show some general characteristics and some individual phenomena unique to a particular location. The general features are probably fact, while some of the individual differences may or may not be real, due to their magnitude being near the minimum readable signal.

There was an immediate phase advance at all sites except Canton and Palo Alto. This phase advance reached its maximum in one step at Roi Namur, Wake, Midway, and possibly Tutuila. At South Point and Kauai, there were two stages of phase advance, and at Viti Levu, there were three stages of phase advance, all occurring within 3 minutes after the event. At Canton the major phase advance occurred 1 minute after the event. At Palo Alto the phase advance was delayed until 1.5 minutes with an additional slower advance lasting to 4 minutes. These delayed phase advances at the various sites appear to be time related. Recovery of phase in general takes at least 6 hours.

Amplitude of the received signal from NBA showed an immediate attenuation at event time at all sites. This attenuation lasted in general less than 4 minutes before recovery started. At South Point and Kauai, amplitude recovery was complete by 4 minutes, followed, possibly, by a second gradual attenuation of signal. At the other sites, the recovery at 4 to 10 minutes was partial, followed by a gradual recovery in amplitude.

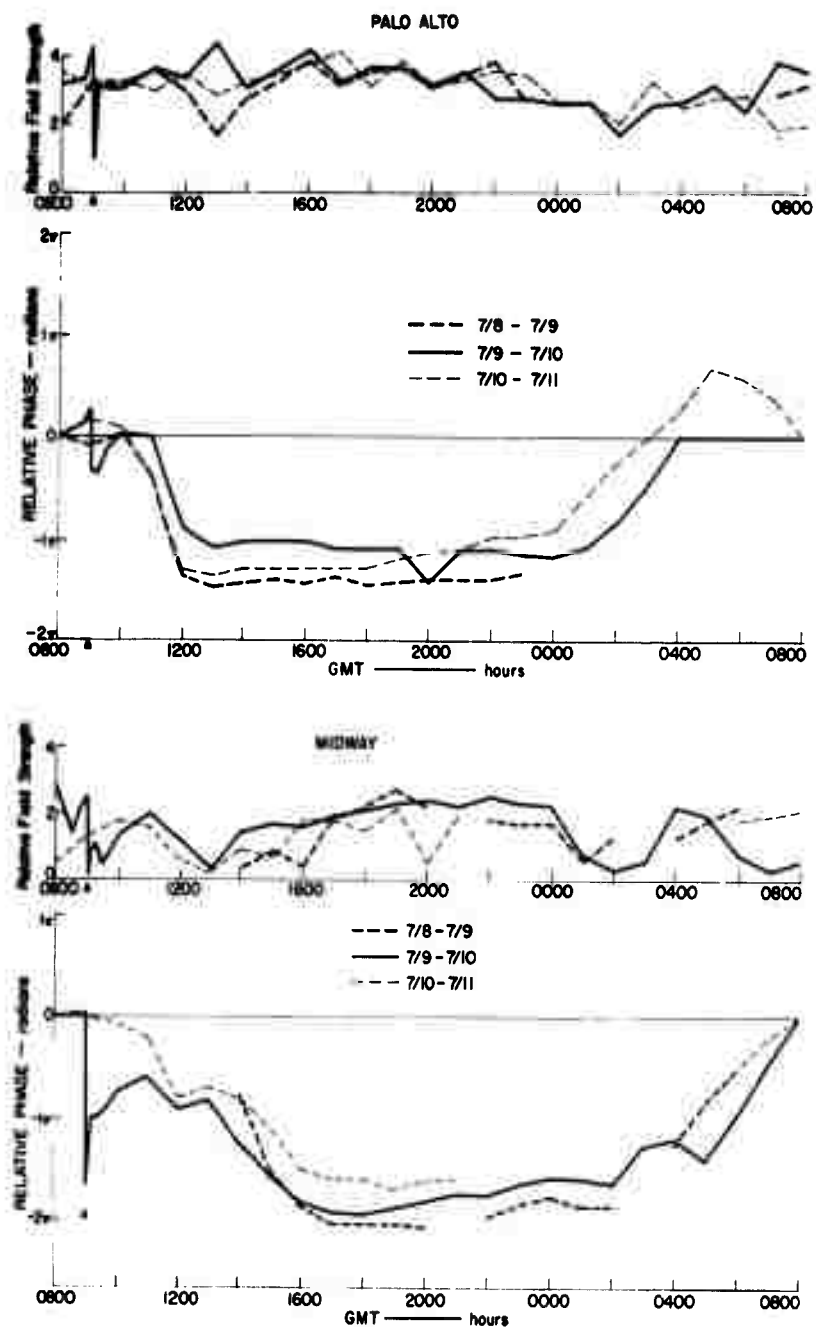


Figure 2.1 Diurnal amplitude and phase at Palo Alto and Midway, Star Fish.

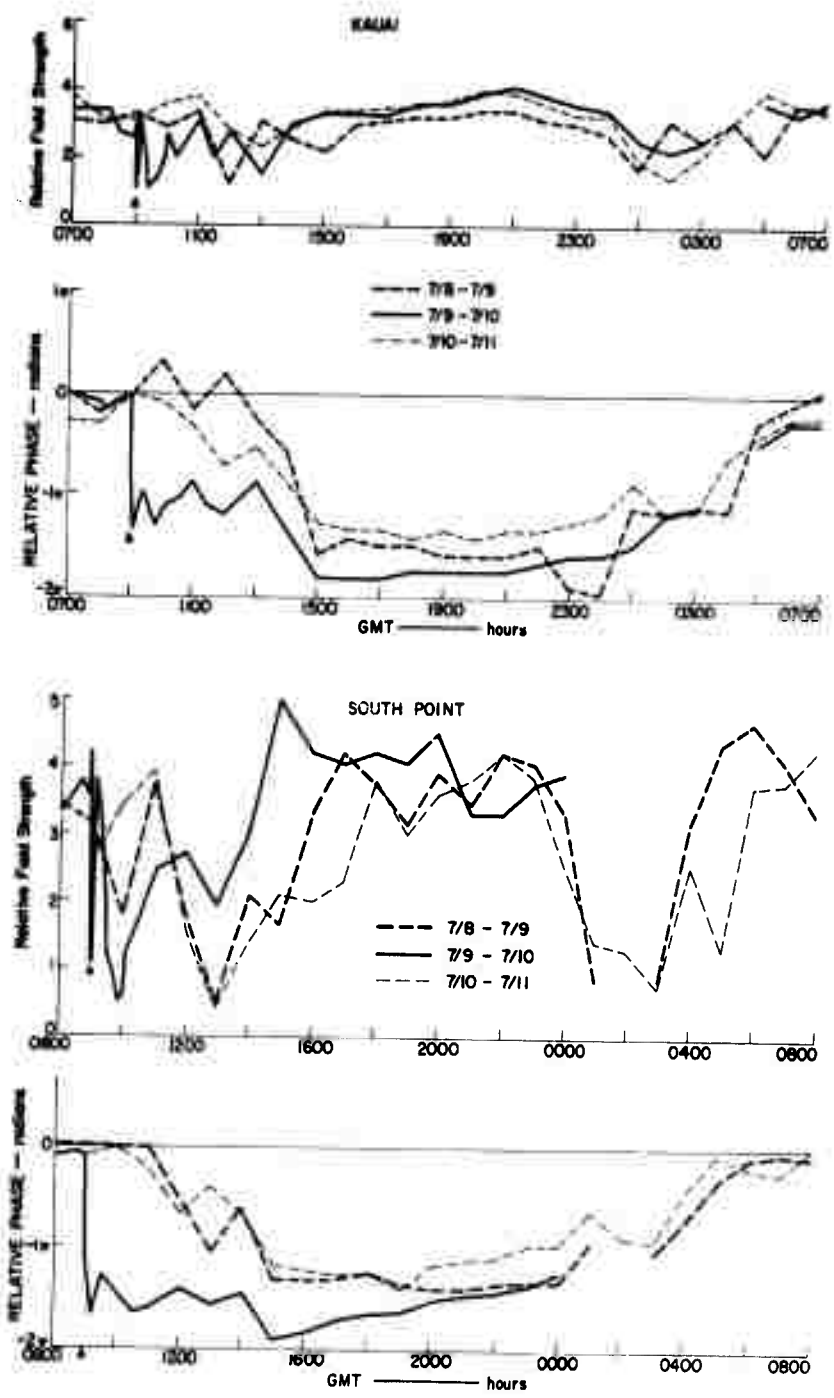


Figure 2.2 Diurnal amplitude and phase at Kauai and South Point, Star Fish.

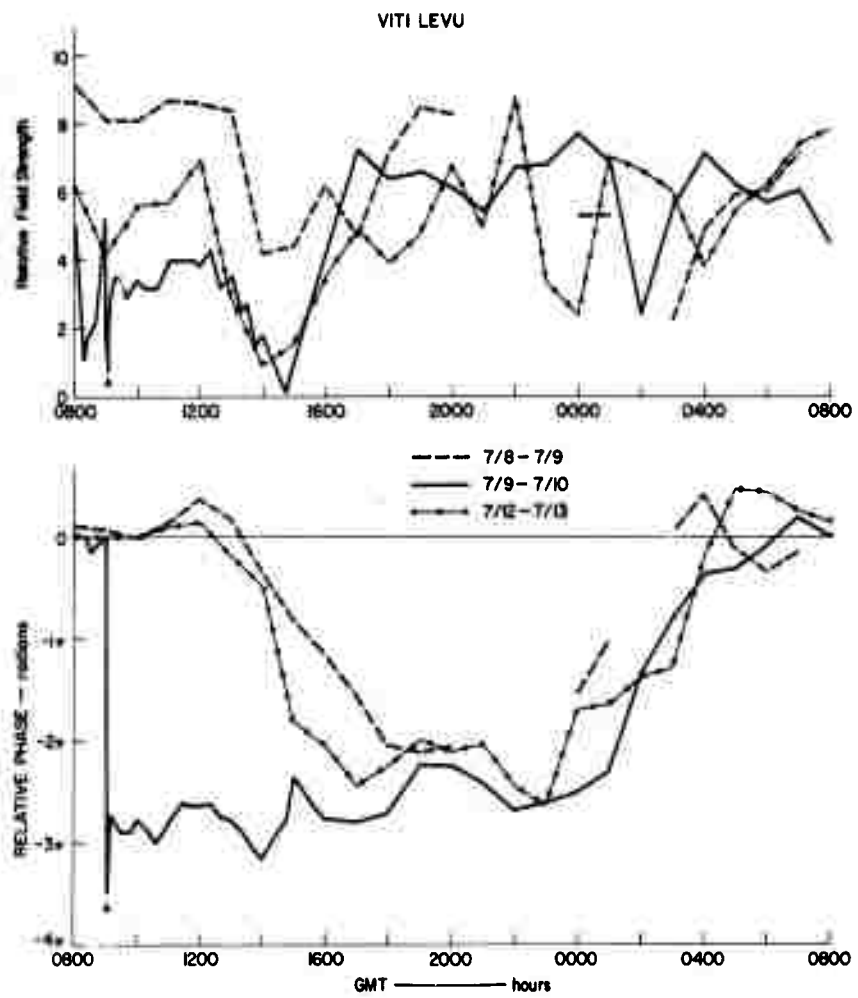


Figure 2.3 Diurnal amplitude and phase at Viti Levu, Star Fish.

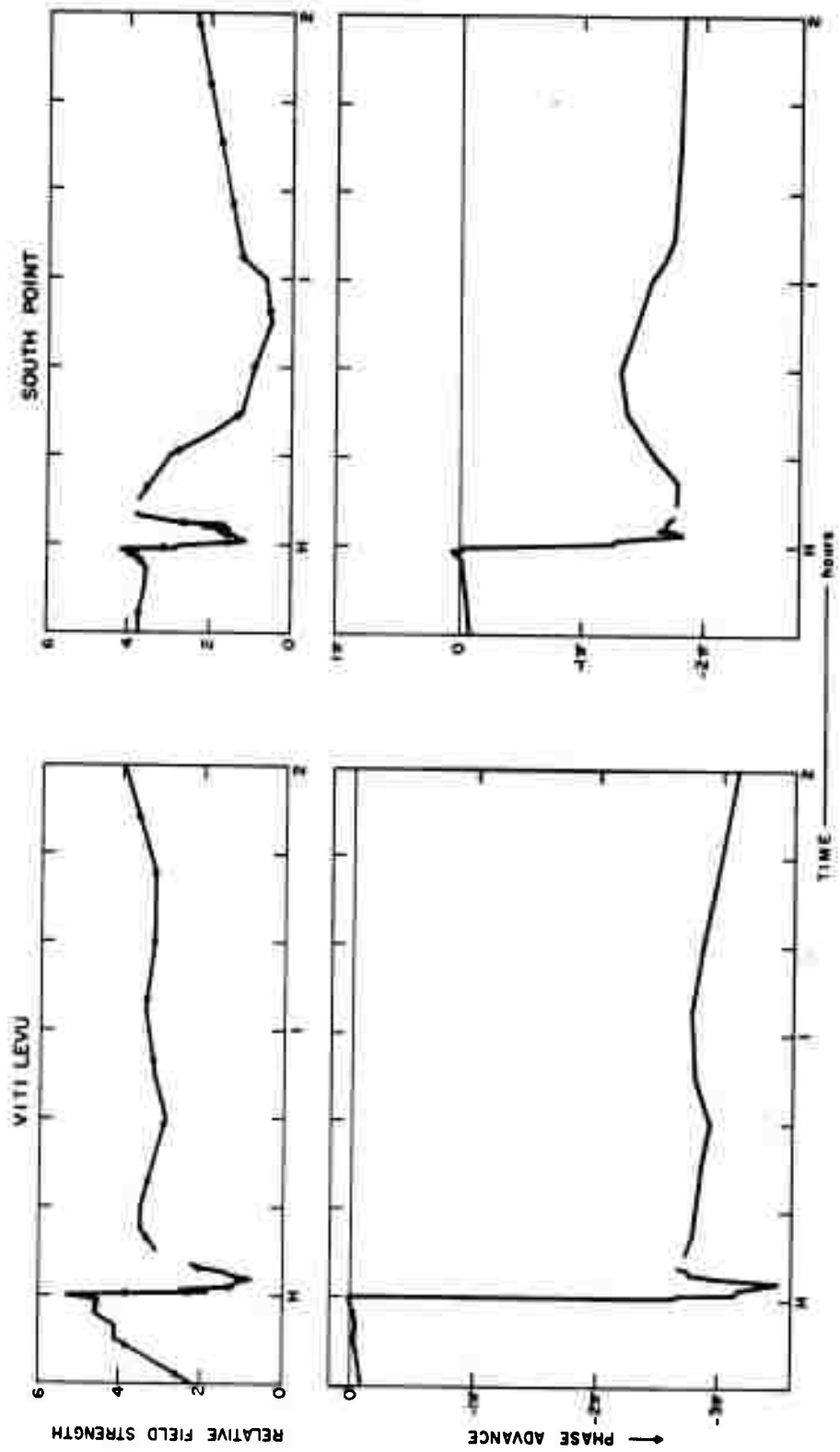


Figure 2.4 Amplitude and phase detail at Viti Levu and South Point, Star Fish.

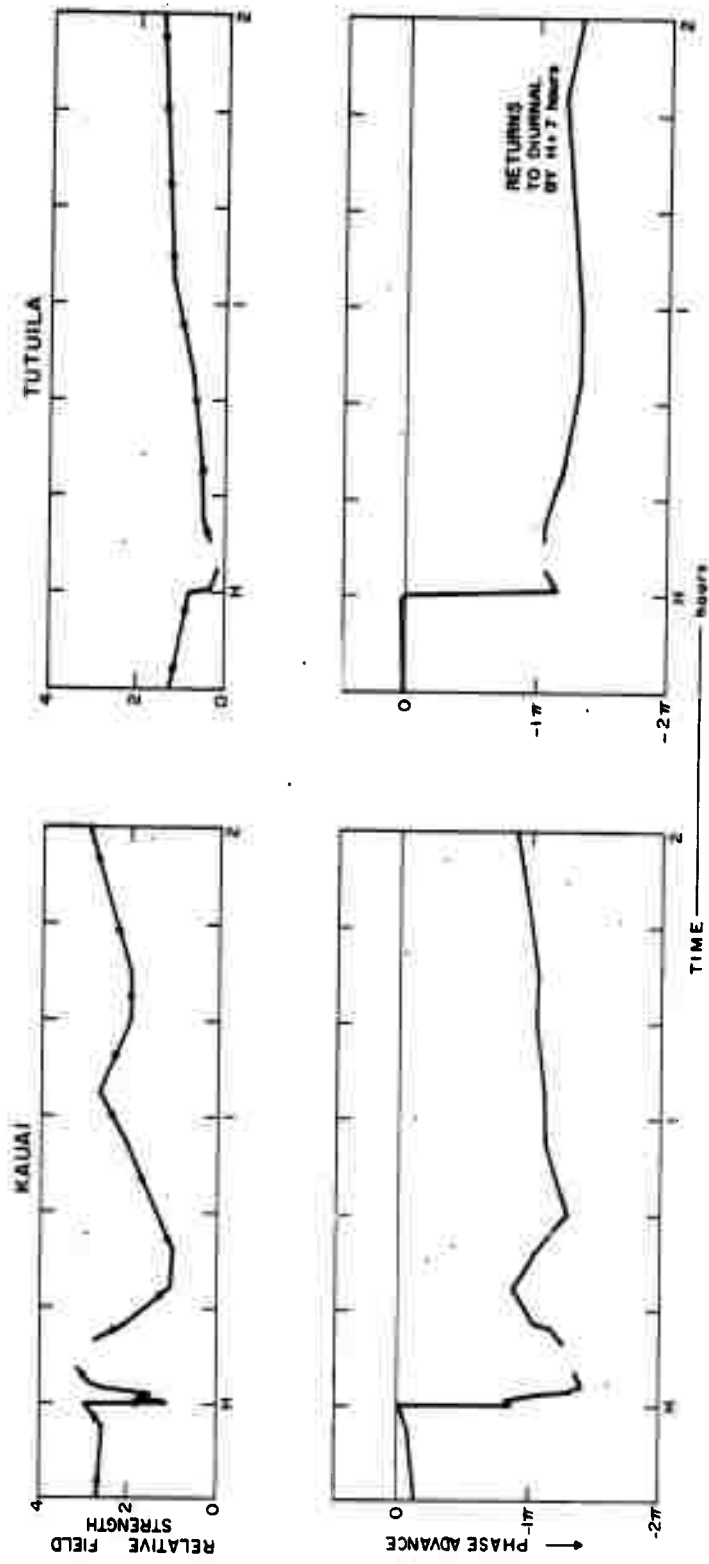


Figure 2.5 Amplitude and phase detail at Kauai and Tubulla, Star Fish.

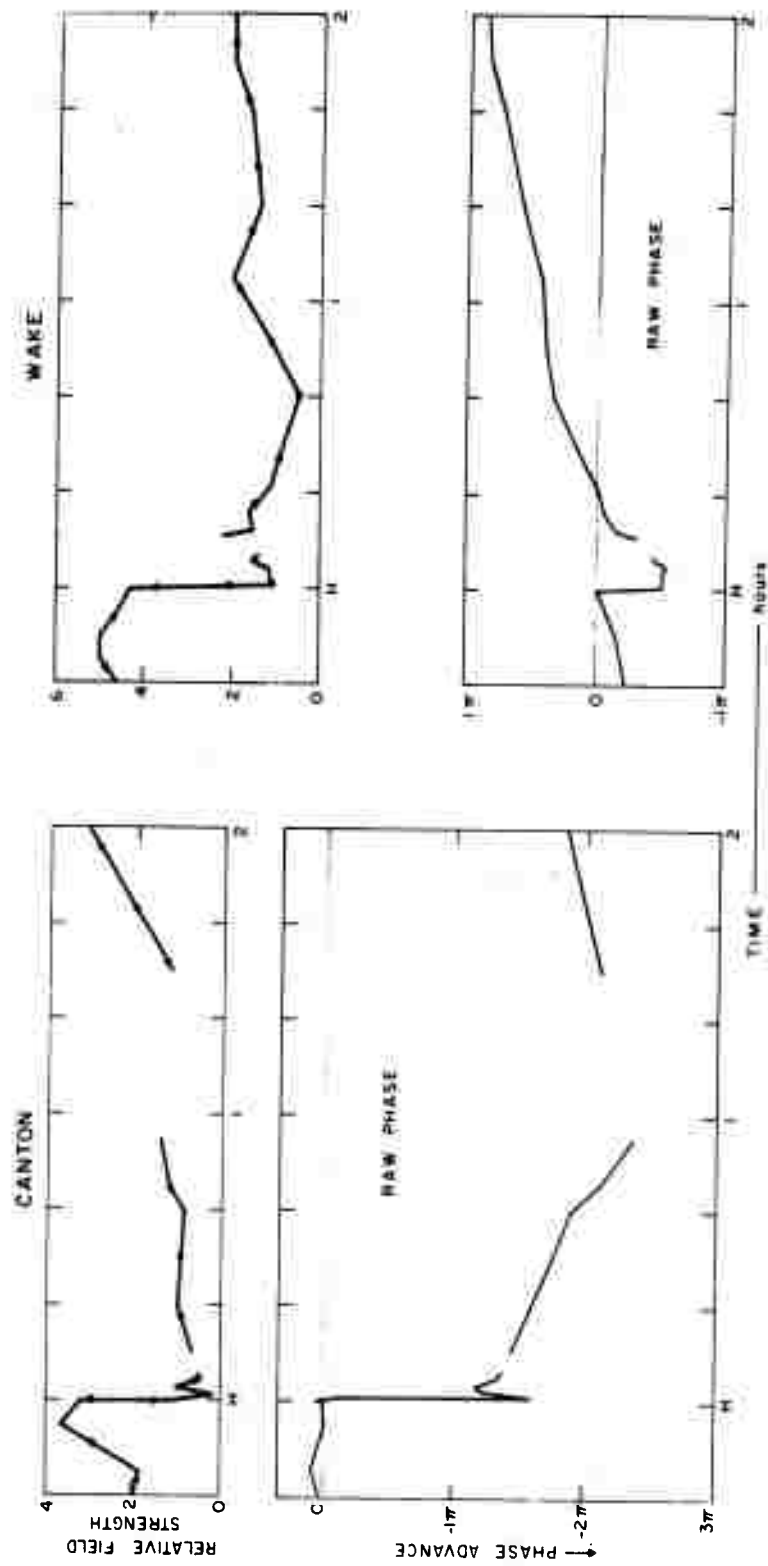


Figure 2.6 Amplitude and phase detail at Canton and Wake, Star Fish.

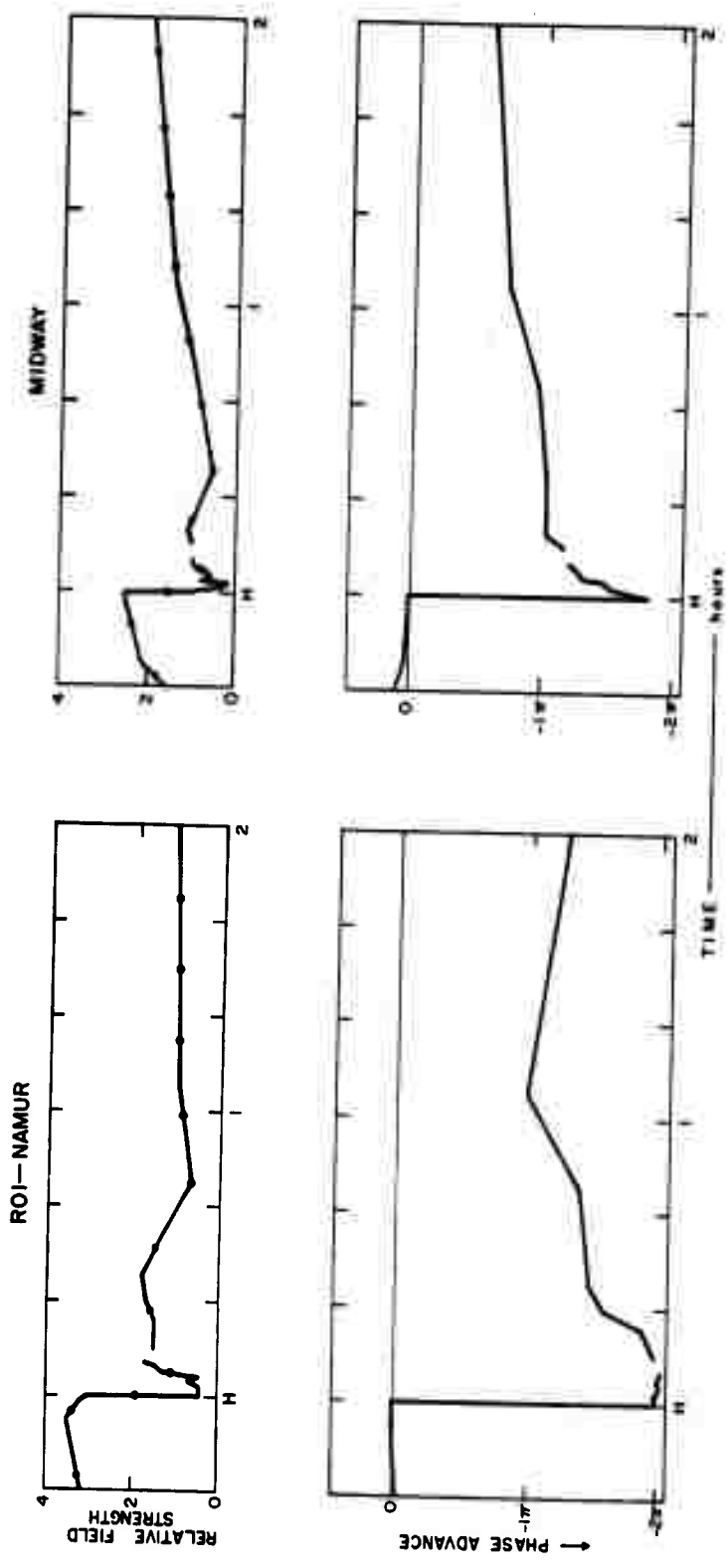


Figure 2.7 Amplitude and phase detail at Roi-Namur and Midway, Star Fish.

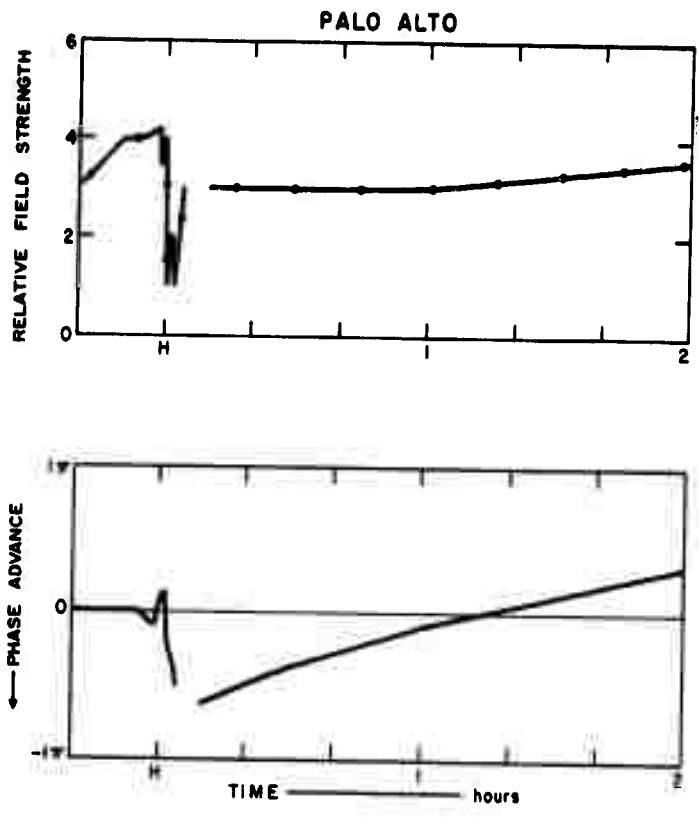


Figure 2.8 Amplitude and phase detail at Palo Alto, Star Fish.

CHAPTER 3

CHECK MATE

3.1 GENERAL

The Check Mate event occurred at 0830 GMT, on 20 October 1962. Records were obtained from all twelve sites; eleven showed effects of the event, Fairbanks being the exception. Figures 3.1 through 3.4 show diurnal amplitude and phase data for the event-related period. Figures 3.5 through 3.10 show details of amplitude and phase variation near event time. (All figures for the Check Mate event are at the end of this chapter.)

The hourly off-periods for the NBA transmitter are not shown on the curves, because the first one after the event was at H + 37 minutes, when variation in the data was less pronounced than in the first 20 minutes following the event. Ground sunrise at NBA was about 1108 GMT.

3.2 OKINAWA

The diurnal phase and amplitude variations of the received NBA signal at Okinawa are shown in Figure 3.1 (top) for five days associated with the event period. Four consecutive days are shown, beginning with the day before the event. Midpath midnight was taken at 1100 GMT, but it is evident from the spread in the phase curves that ionospheric conditions were not undisturbed in the hours near this selected midnight. This is to be expected on such a long northern path.

The amplitude data show good agreement at all hours of the day. An appreciable attenuation is apparent in the event curve at event time. Recovery to normal signal level is early, near $H + 30$ minutes; and the curve follows the recorded diurnal variation throughout the rest of the day. A phase advance of 1.8π occurred at event time. A two-day average was used to obtain the drift-slope on event day and the day before event. The event-day curve shows a large deviation from normal until about $H + 6$ hours and returns to normal by $H + 7$ hours.

Details of phase deviation and amplitude at Okinawa are shown in Figure 3.6. Amplitude, compared to the average level before H , falls immediately to less than 0.1, then rises abruptly to 0.35 at $H + 0.5$ minute. There is no appreciable change from there to $H + 3$ minutes; then, the level decreases again at $H + 5$ minutes to 0.1, recovering from that point to 0.7--which is about normal--at $H + 10$ minutes. This normal level is essentially maintained through $H + 2$ hours.

The phase-deviation curve shows an advance of 1.8π at H , very rapid partial recovery to 1.4π at $H + 2$ minutes, and another more gradual advance to 1.7π by $H + 10$ minutes. There is slight scattering of the points during the period of low signal. A gradual recovery follows, to 1.2π by $H + 33$ minutes. A comparison of the Okinawa phase data, presented in Figures 3.1 and 3.6, shows the effect of removing normal phase behavior from the data to obtain the effects due to the event.

3.3 MIDWAY

The diurnal phase and amplitude variations of the NBA signal received at Midway are shown in Figure 3.1 (bottom) for three consecutive days about the Check Mate event. Midpath midnight is at 0800 GMT. The diurnal amplitude curves show excellent correspondence, although signal level is relatively low. A slight diurnal-variation pattern is evident. There is definite attenuation at the event, but the effect is not great and of short duration, less than 15 minutes.

The phase curves show some spread, but agreement from day to day is still good. The low signal level causes some scattering in the phase readings. A very rapid phase recovery is notable in the event-day curve, which approaches normal near $H + 2$ hours, and probably returns to diurnal variation before $H + 5$ hours, since behavior near $H + 4$ hours is in doubt. There is a possibility that phase deviation between H and $H + 2.5$ hours is more drastic (by one full cycle) than that shown, since the variation near $H + 4$ hours is in doubt. Evidence does not seem to indicate that a phase shift of more than one cycle occurred, however.

Figure 3.5 shows details of phase deviation and amplitude at Midway for the Check Mate event. There is a small immediate decrease in signal level at H to 0.7 of its pre-event value, followed by a gradual increase to the former level by $H + 20$ minutes, and to about

1.5 times the former level by H + 2 hours. The level is essentially normal after H + 15 minutes.

The phase-deviation curve shows an advance at H of about 1.1π and almost immediate partial recovery to 0.6π at H + 2 minutes. Thereafter, phase recovery is more gradual, reaching 0.4π at H + 10 minutes. The deviation then remains about constant through H + 1.5 hours except for a slight retardation at H + 28 minutes to 0.3π , and advance to 0.45π at H + 35 minutes. By H + 2 hours a gradual advance has begun, which continues to H + 2.5 hours, when data were lost. Phase has become normal by H + 4.5 hours.

3.4 KAUAI

The diurnal phase and amplitude variation of the NBA signal received at Kauai are shown in Figure 3.2 for three consecutive days about the Check Mate event. Midpath midnight is taken at 0900 GMT. There is excellent agreement among the readings in both sets of curves for most hours of the day, but amplitude is in some disagreement near midnight. The amplitude data show a clear diurnal effect. No event effect is readily apparent, as the spread in readings makes comparison doubtful.

A two-day average was used to estimate the drift-slope for 19-20 October and 20-21 October ($0.1\pi/\text{hour}$), since there was scatter in the readings taken for 2 hours prior to the event. The curve drawn before H is an average of the readings taken. This method causes the event curve to shift slightly upward from normal prior to H, but the

effect is compensated for in the phase-deviation plot (Figure 3.6). The agreement among the phase curves is surprisingly good after 1500 GMT. After the initial advance and recovery within 40 minutes after H, the event produced no pronounced effect.

Details of phase deviation and amplitude at event time are shown in Figure 3.6. Recording levels were low between H - 5 and H + 5 minutes. The amplitude curve shows an increasing trend through the scatter of readings until H, then a decreasing trend, (to the H - 10-minute level) by H + 5 minutes. Signal level is about constant between H + 5 and H + 20 minutes, then increases to 1.5 times the H - 10-minute level. The phase-deviation curve is an average of scattered points ($\pm 0.1\pi$) between H - 6 and H + 3 minutes. It shows an advance of about 0.6π at H, rapid recovery to about 0.3π by H + 3 minutes, and no change from there to H + 5 minutes. Phase then recovers gradually to normal. Diurnal effect becomes apparent after H + 1.5 hours.

3.5 TUTUILA

The diurnal phase and amplitude variation of the NBA signal received at Tutuila are shown in Figure 3.2 (bottom) for the Check Mate event, for event day and the day after. Midpath midnight is at 1000 GMT. Recording level is low on these records, except in the hours near noon. The diurnal amplitude data show some agreement, and diurnal effects are readily apparent, but it is impossible to evaluate well the behavior of the event curve between H - 30 minutes

and $H + 1.5$ hours. The average level through this period is low before and after H , rises near $H + 30$ minutes, falls to about the previous low-level near $H + 1$ hour, and rises to about the level of the following day near $H + 1.5$ hours.

There is better agreement between the two diurnal phase curves. The 21-22 October curve is fairly representative of the diurnal characteristic for the weekly period near the event; the event data follow it closely after $H + 1$ hour. Slight phase advance is shown at H , but the most significant effect is a retardation near $H + 30$ minutes.

Details of phase deviation and amplitude are shown in Figure 3.9. The amplitude curve shows considerable scatter in the readings, attributable to low-level recordings. There is possible evidence of attenuation after H . However, on the average, signal level remains at approximately the pre-event level for the period shown.

The phase-deviation curve shows an apparent advance of 0.1π between H and $H + 1$ minute, but it could well be a result of scatter in the readings.

A significant, gradual retardation shows between $H + 2$ and $H + 20$ minutes, to a maximum deviation of 0.5π . Slow recovery takes place from that point until $H + 65$ minutes when phase is essentially normal. The rates of change of slope and drift rates for these data make it impossible to assume a 2π phase advance at H that the system would not have followed.

3.6 CANTON

The diurnal amplitude and phase of the NBA signal received at Canton for three days around the time of the Check Mate event are shown in Figure 3.3. Midpath midnight is 0800 GMT. The diurnal amplitude curves show a pronounced diurnal effect after local (midpath) noon, and there is reasonable conformity among the three curves. A slight attenuation shows after H in the event curve; another larger attenuation shows near H + 30 minutes; and signal appears low until H + 5 hours. However, there is no marked effect as is seen in data for other events.

The diurnal phase curves show closely grouped readings throughout much of the day, in spite of sparse data. A one-cycle advance was inserted at the event to bring the drift-slope for event day into correspondence with those of the background days. Scatter is evident in the readings for the first hour after H, but the curve evidently shows abnormal phase advance until H + 8 hours. The diurnal effect is evident in the data after H + 4 hours.

Details of phase deviation and amplitude are shown in Figure 3.5 for a period of 2.5 hours about the Check Mate event. Signal levels are low on the record for this period, and time resolution is poor. The amplitude detail shows no definite pattern through the event; it indicates only a gradual general attenuation to about 0.5 of the pre-event level, which lasts until H + 1.5 hours, when the signal level begins to increase toward normal. The accuracy of the readings is poor until about H + 1 hour.

The phase-deviation curve shows a rapid advance of about 1.8π between H and H + 2.5 minutes. There is a $\pm 0.2\pi$ scatter in the readings, due to the small signal level. An average through the curve shown should be assumed for the phase variation. There is indication of a fairly rapid partial recovery after H + 3 minutes, to about 1.0π by H + 40 minutes. The data are more accurate by H + 40 minutes and show a further phase advance, more gradual now, to 1.4π by H + 2 hours. Near H + 3 hours, there is an apparent partial recovery, which seems to show diurnal effect. The normal conditions are reached by H + 8 hours.

3.7 VITI LEVU

The diurnal phase and amplitude variations for the NBA signal received at Viti Levu are shown in Figure 3.4. Five consecutive days about the Check Mate event are represented. Midpath midnight is 1000 GMT. There is poor agreement among the amplitude curves, although a diurnal variation is clearly evident. There is a large attenuation in the signal level at H, followed by early recovery. Comparison with an average normal amplitude curve for this period would probably be meaningless.

The diurnal phase curves show excellent agreement. The drift-slope variation through the period has been established without doubt, and the slope is not extreme (4.8 cycles per day). Since there is no evidence for assuming a one-cycle phase advance at H, the event curve has been drawn to show phase retarded by the event, an anomalous effect. Recovery to normal occurs within 2.5 hours after H.

Details of phase deviation and amplitude at Viti Levu are shown in Figure 3.9. Amplitude falls abruptly to about 0.8 of the pre-event level at event time. Average signal level seems to have recovered fully by H + 20 minutes.

The phase-deviation curve shows a retardation of 0.4π immediately at H, rapid recovery to 0.2π at H + 2 minutes, and then further retardation to about 0.9π at H + 20 minutes. (Scatter of $\pm 0.05\pi$ is evident in the readings until H + 10 minutes.) Final recovery begins by H + 35 minutes and continues gradually through H + 90 minutes, when phase is essentially following the normal diurnal pattern.

3.8 SOUTH POINT

There were only 15 hours of usable data available from South Point in a five-day period about the Check Mate event. These were consecutive, beginning at H - 30 minutes on event day. As a result, phase data are shown in the raw form, with corresponding amplitude, in Figure 3.7. These are the only curves of South Point data shown for the event.

The amplitude-detail curve of Figure 3.7 shows an enhancement at H, to about 2.0 times the pre-event level. In terms of the average pre-event level, signal varies from 2.0 at H + 0, decreasing to 1.6 by H + 5 minutes. The level is approximately constant from H + 5 to H + 70 minutes, except for a drop to 0.8 at H + 30 minutes, when the record shows extremely erratic signal which is averaged on the plot in Figure 3.7. There is a decrease to pre-event level at H + 1.5 hours, followed by a gradual return to 1.6 by H + 2 hours.

The raw phase data include oscillator drift that is probably less than -0.4π radian per hour, so it is reasonable to assume that the variation after $H + 1$ hour represents phase recovery. A phase advance of 0.7π has been assumed to occur at H (in lieu of a retardation, and in keeping with the effect shown at Kauai). There is rapid partial recovery in phase through 0.5π at $H + 1$ minute. Little change is apparent from $H + 7$ to $H + 25$ minutes, with slight retardation near $H + 30$ minutes, and an advance from $H + 30$ to $H + 40$ minutes. By $H + 50$ minutes, there appears to be a very slow recovery, which continues through $H + 130$ minutes.

3.9 WAKE

The data available for Wake for the Check Mate event are limited to 3 hours on event day. Only the details of amplitude and raw phase are shown (Figure 3.7), because it was impossible to determine a drift-slope for event day. The phase data show an assumed advance between H and $H + 1$ minute of about 0.9π , and a further less-rapid advance to 1.4π by $H + 8$ minutes. Phase remains approximately constant from there to $H + 50$ minutes, except for a slight retardation at $H + 10$ minutes. There is apparent recovery after $H + 1$ hour, continuing until data are lost at $H + 2.5$ hours.

The amplitude-detail curve shows a large attenuation at the event. With respect to the pre-event level, the variation is: a very rapid decrease to 0.15 at $H + 0.5$ minute, a rapid recovery to 0.7 at $H + 10$ minutes, another decrease to 0.5 by $H + 16$ minutes,

and a gradual general recovery throughout the rest of the period shown.

3.10 RAROTONGA

Only 22 hours of NBA data were available from Rarotonga around the Check Mate event time, so no diurnal comparison was possible. The event occurred in the middle of the recording period. A drift-slope of $+0.6\pi$ radian per hour was estimated from the appearance of the phase data, and phase was normalized to this slope. The normalized phase-detail curve, with corresponding amplitude, is shown in Figure 3.8. The normalized phase curve shows a rapid retardation beginning at H and continuing through 0.4π at H + 5 minutes, then very gradual retardation to a maximum of 0.5π at H + 33 minutes. There is a very gradual advance from that point through H + 2 hours. It is possible that a phase advance of one cycle occurred at H, but since no evidence was available to indicate such behavior, the retardation effect is shown.

The amplitude curve in Figure 3.8 shows a slight change through the event and an abrupt increase at H + 0.5 minute, followed by a rapid decrease at H + 1 minute to 0.7 of the pre-event level. Recovery is complete by H + 4 minutes.

3.11 PALO ALTO

The effect of the Check Mate event on the NBA signal received at Palo Alto was slight, no appreciable deviation in amplitude or

phase being apparent, except within a few minutes of the event. Only detailed-amplitude and normalized-phase curves are shown (Figure 3.8). Diurnal amplitude and phase show no event effect beyond the immediate event period. The amplitude-detail curve shows significant attenuation between H and $H + 1$ minute, to about 0.16 of the pre-event level. There is a very rapid recovery to the pre-event level at $H + 2$ minutes, and a very gradual increase from there throughout the rest of the period shown. The level is essentially normal for the entire day, except for the interval from H to $H + 2$ minutes.

The normalized phase curve shows a slight advance at event time of 0.2π , in conjunction with the attenuation in signal level (there is a scatter in the readings prior to H almost this large, $\pm 0.05\pi$, and the curve drawn is an average of these data until $H - 0$). The change in phase at event time might be the result of scattered readings, but the scatter in data is very small after H . There is no appreciable deviation from normal in the entire period shown.

3.12 ROI-NAMUR

Fewer than 5 hours of NBA data are available from Roi-Namur for the day of the Check Mate event, but they are consecutive around the event. The variations in these data are shown in detail in Figure 3.10. Phase is plotted in the raw form. It is not possible

to estimate the oscillator drift-slope. The raw-phase curve shows a suspicious step-like variation (no equipment malfunction is noted, and the record seems normal): the phase angle is seen at 0 before H, advances to π at H, remains constant to H + 4 minutes, and then is lost. When the signal returns at H + 21 minutes, the phase angle is 2π , and it does not vary appreciably for over an hour. The phase data after H + 21 minutes could be plotted starting at zero, since there is no way to determine its relative position with the few data available. Similarly, a phase retardation could be shown following the event. A gradual phase advance finally occurs after H + 1.5 hours.

The detailed amplitude curve shows reasonable variation. At H, there is an immediate attenuation to 0.5 of the pre-event level and a further decrease to 0.14 at H + 4 minutes. Signal is lost at H + 5 minutes; it reappears at H + 21 minutes at 0.14. The amplitude then increases to 0.5 by H + 35 minutes and remains constant at that level until H + 70 minutes. By H + 1.5 hours, the signal amplitude has returned to 0.8.

3.13 SUMMARY

For the Check Mate event, data were collected at event time at twelve sites. All sites except Fairbanks observed event-associated effects. A review of the Fairbanks data shows a possible small disturbance at 0830 GMT, but its validity is in question since the record contains many similar disturbances at other times.

The recorded amplitude of the received NBA signal during the Check Mate event gave no clear indication of a pattern in the observed effect. All stations show a disturbance at event time, but this disturbance is small and results in short-term variations both as attenuations and enhancements of signal level.

Phase variations for Check Mate show phase advances for paths into the northern or event area, with a return to normal in 1 or 2 hours. Canton, Palo Alto, and Okinawa show phase advances that persist for several hours, with Palo Alto showing the smallest event-associated effect and Okinawa showing the largest. The three southern or conjugate-area stations show an unexpected phase retardation, reaching a maximum at $H + 20$ minutes and returning to normal within 2 hours. Evidence of the phase retardation has persisted through all attempts in data analysis to force the data to show a phase advance. In addition, a comparison of the maximum retardation at Tutuila and Viti Levu is consistent with propagation path lengths.

The Check Mate event occurred at 0830 GMT. Ground sunrise at NBA occurred at 1108 GMT, giving over 1.5 hours before any part of any path was in daylight. In general, event disturbances were recovered before sunrise ($H + 1.5$ hours), except for Canton and Okinawa which returned to normal at about 8 hours.

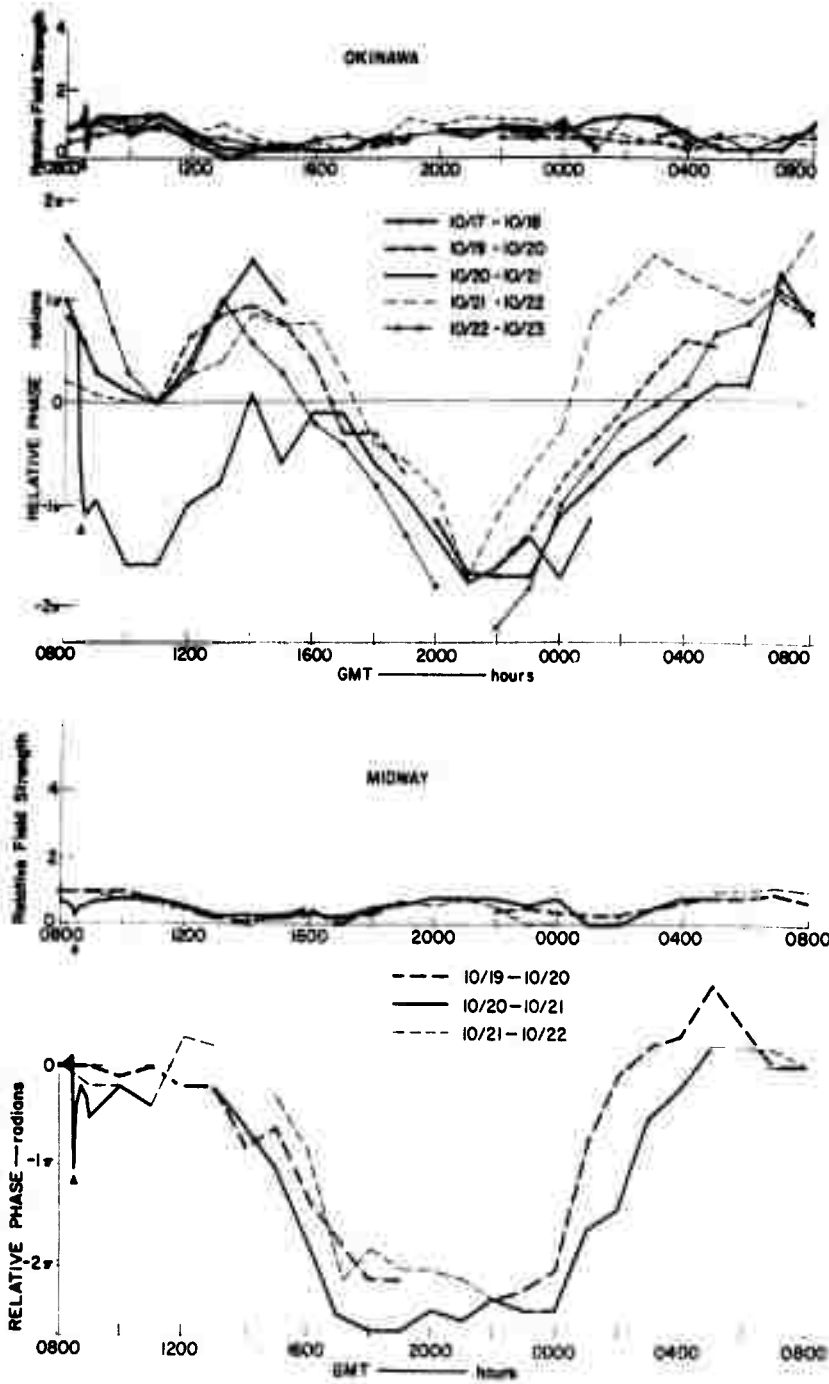


Figure 3.1 Diurnal amplitude and phase at Okinawa and Midway, Check Mate.

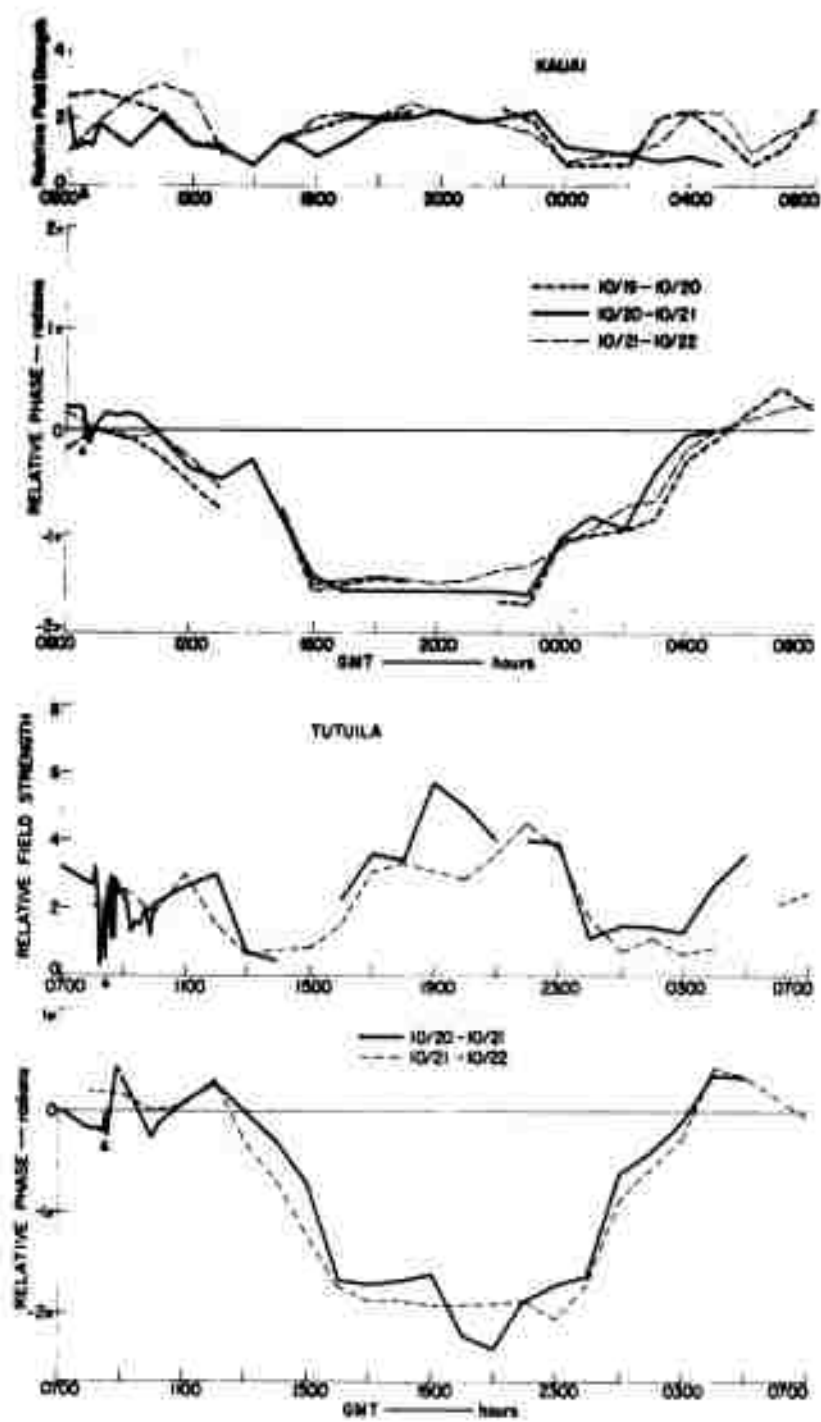


Figure 3.2 Diurnal amplitude and phase at Kauai and Tutuila, Check Mate.

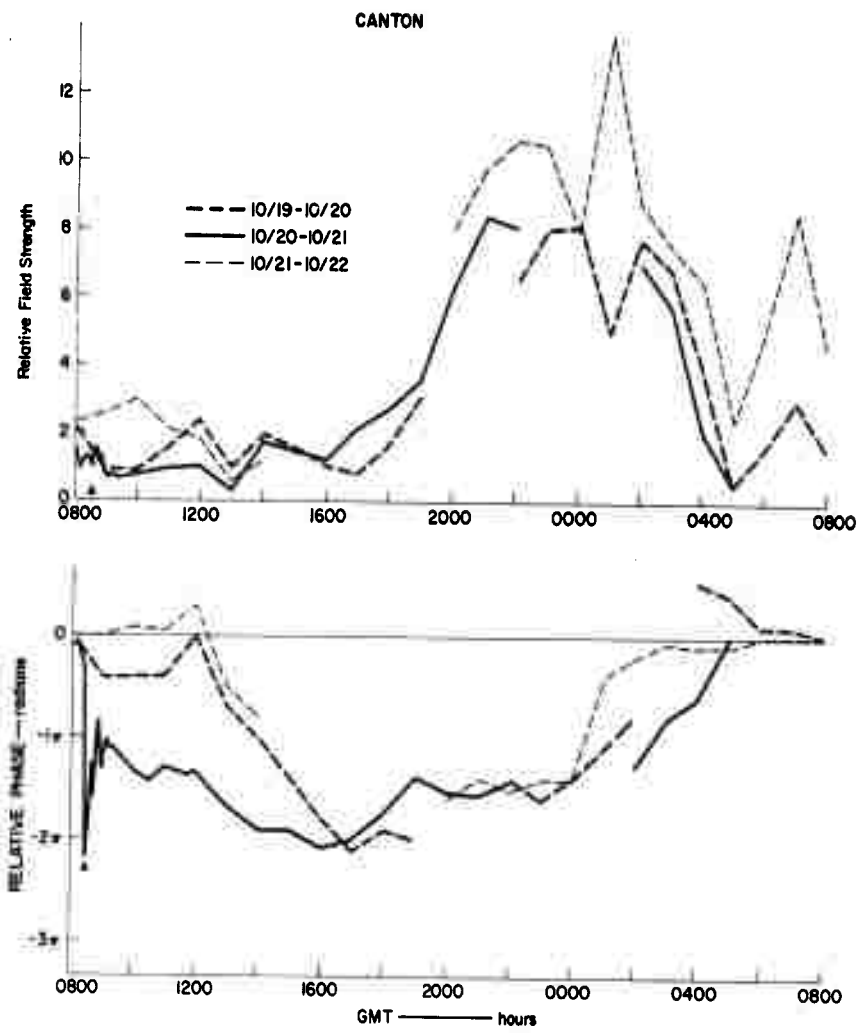


Figure 3.3 Diurnal amplitude and phase at Canton, Check Mate.

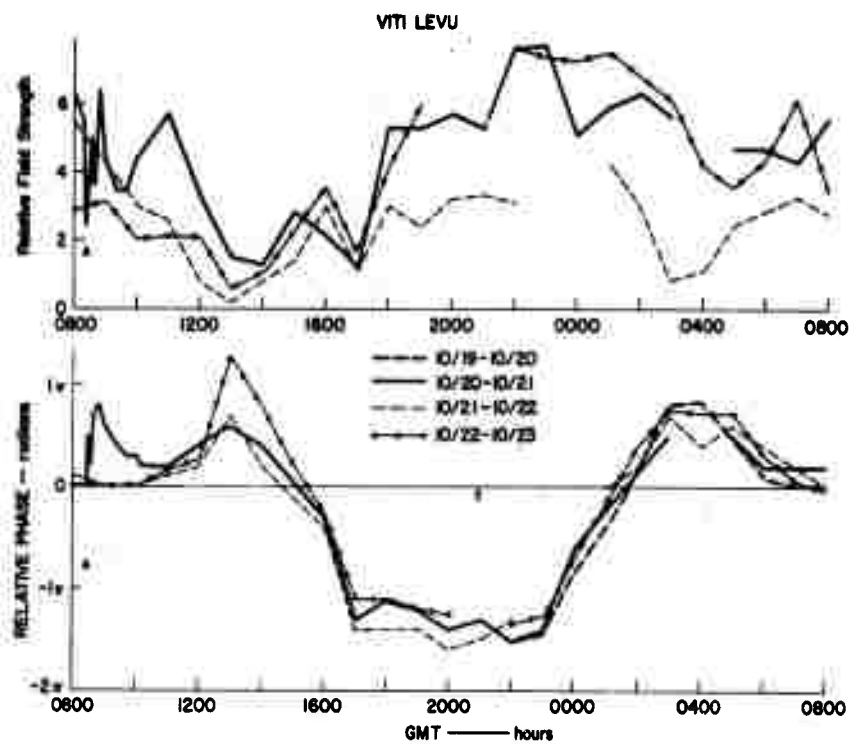


Figure 3.4 Diurnal amplitude and phase at Viti Levu, Check Mate.

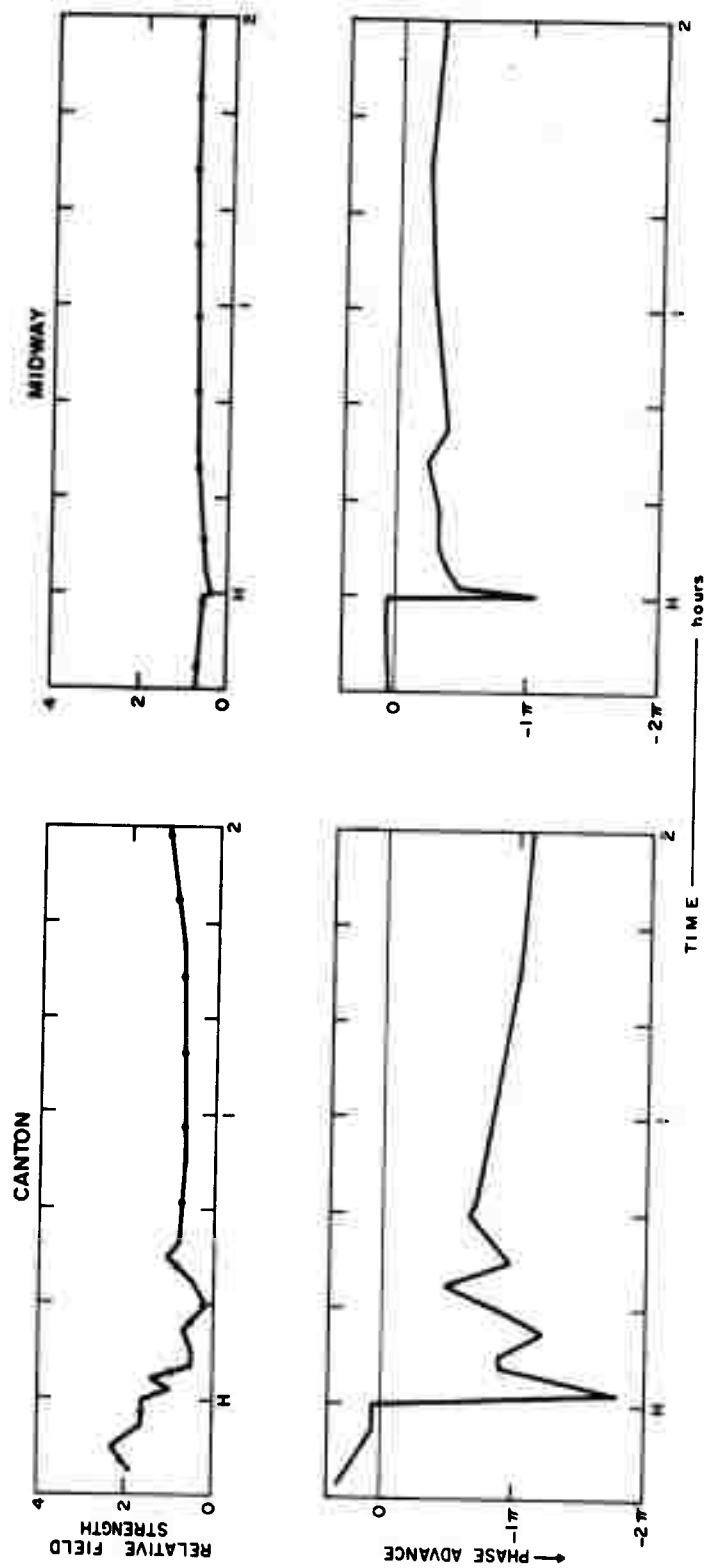


Figure 3.5 Amplitude and phase detail at Canton and Midway, Check Mate.

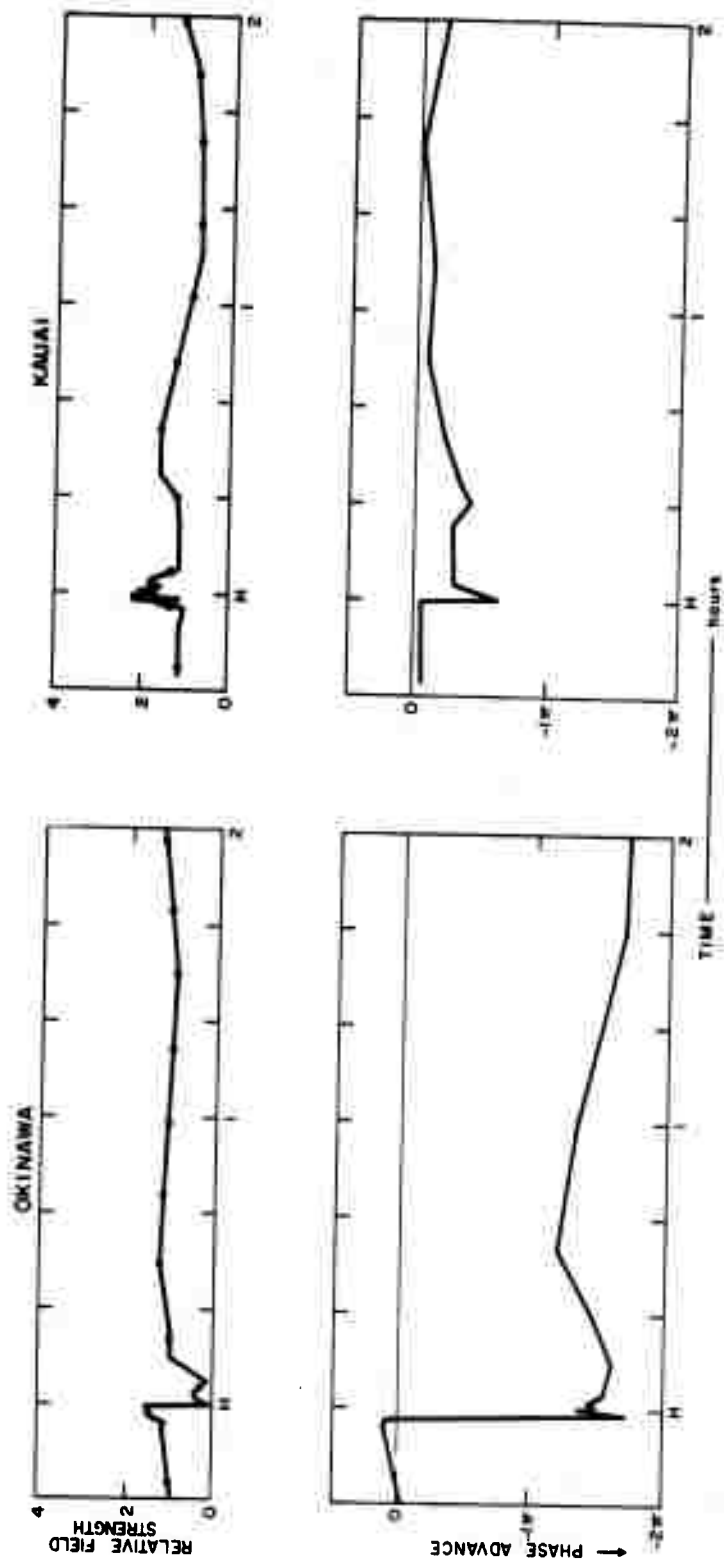


Figure 3.6 Amplitude and phase detail at Okinawa and Kauai, Check Mate.

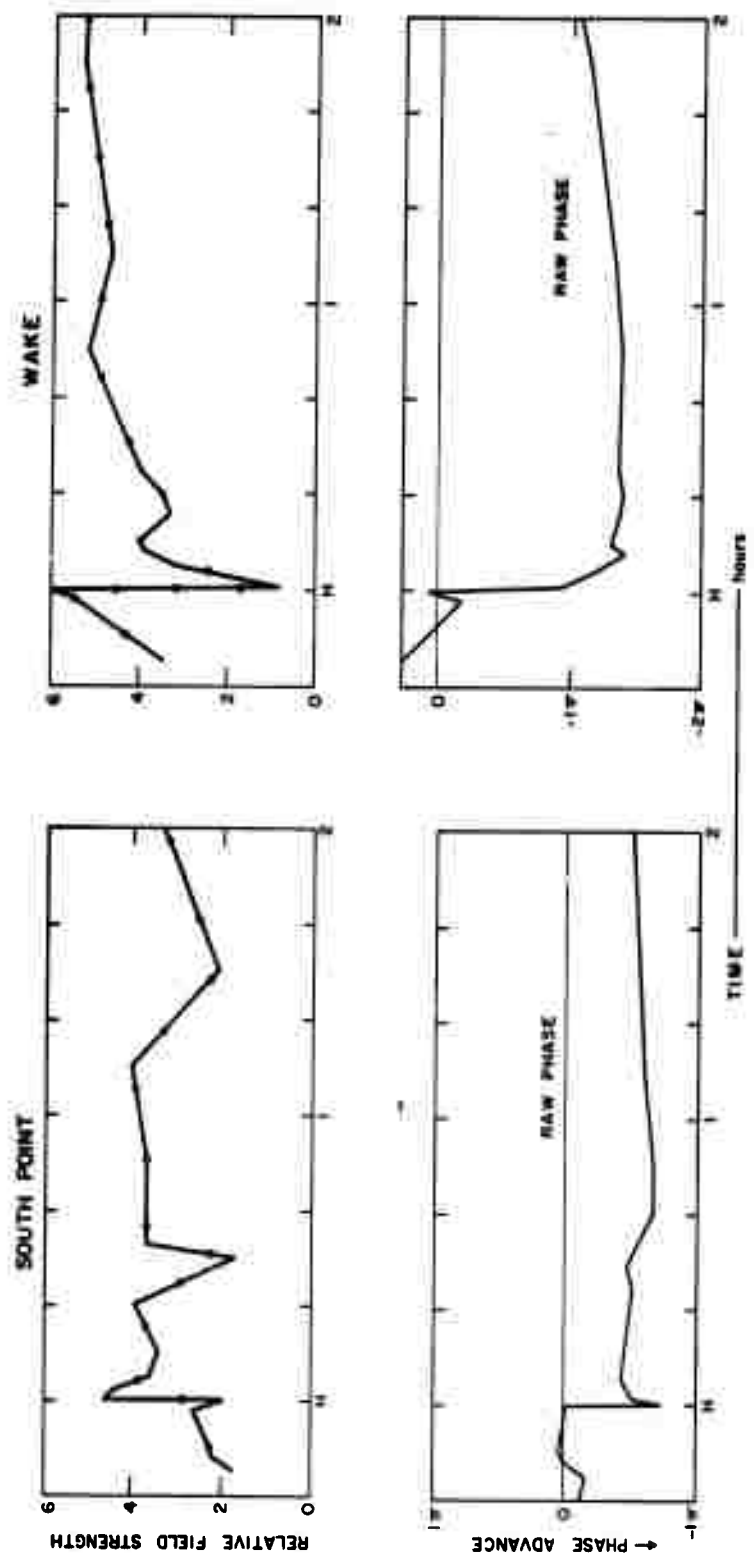


Figure 3.7 Amplitude and phase detail at South Point and Wake, Check Mate.

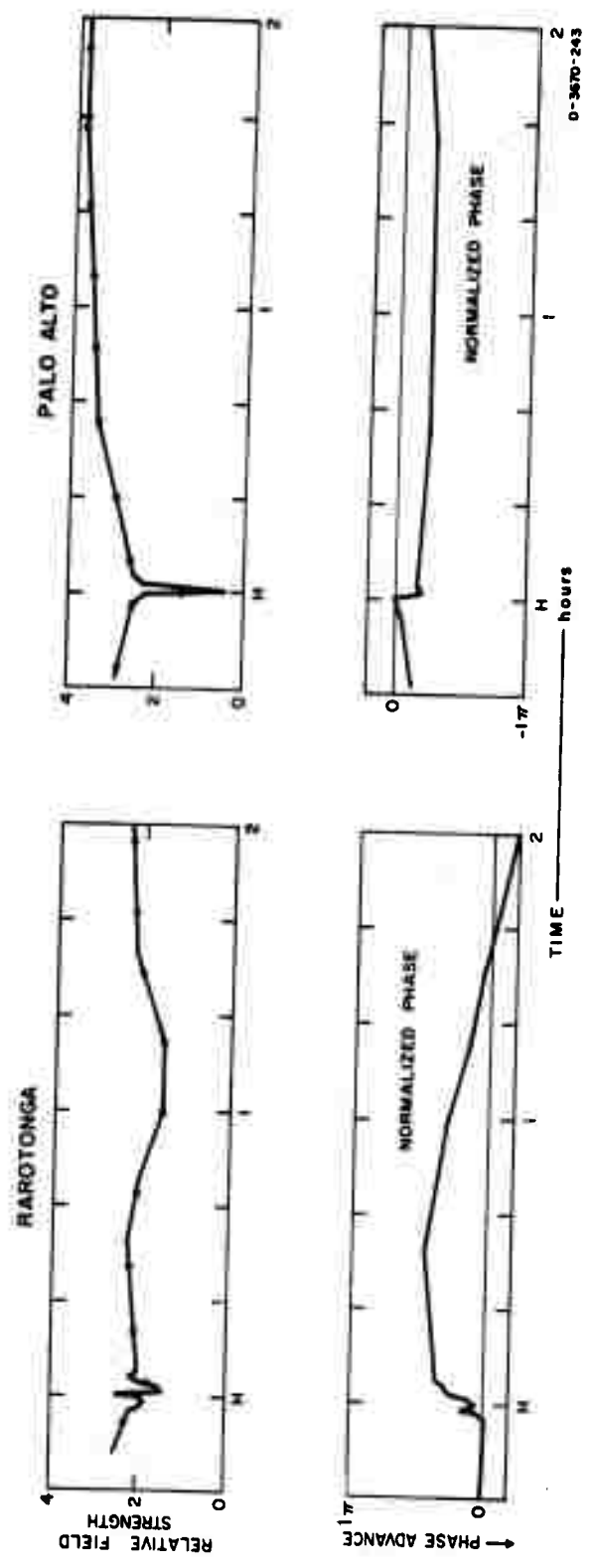


Figure 3.8 Amplitude and phase detail at Rarotonga and Palo Alto, Check Mate.

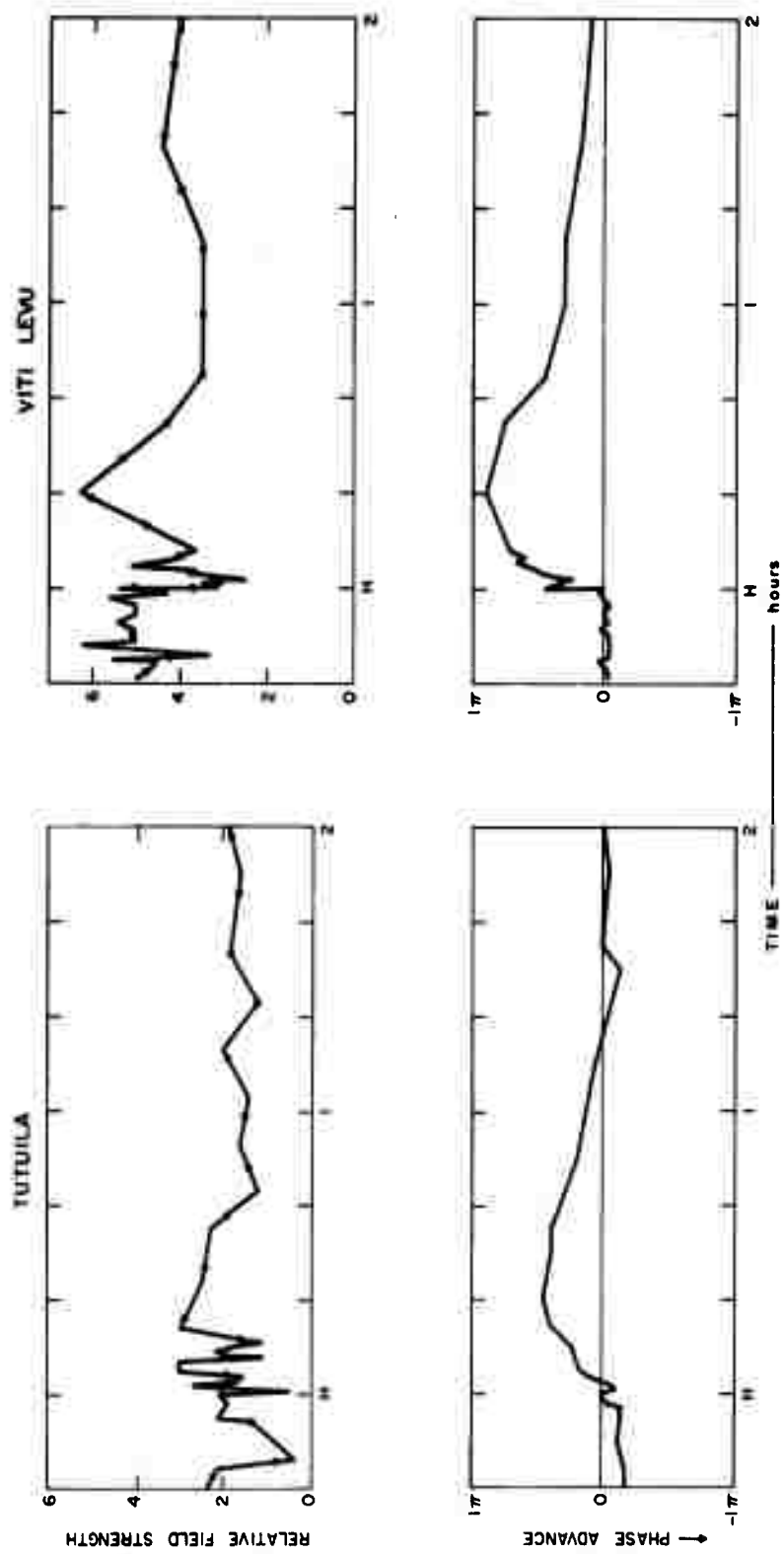


Figure 3.9 Amplitude and phase detail at Tutuila and Viti Levu, Check Mate.

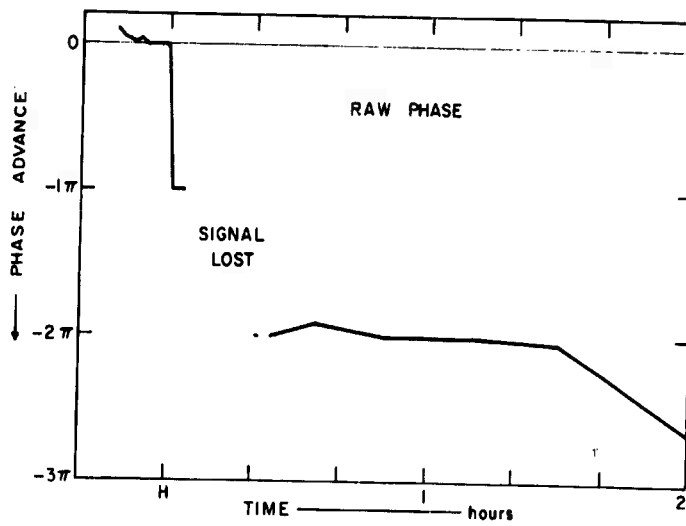
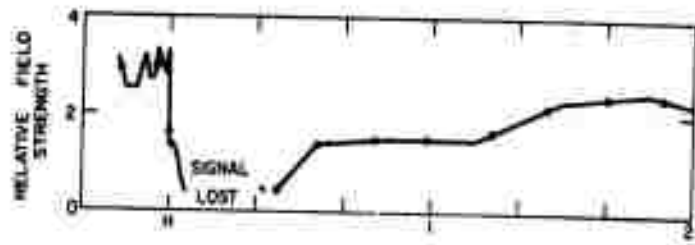


Figure 3.10 Amplitude and phase detail at Roi-Namur, Check Mate.

CHAPTER 4

BLUE GILL

4.1 GENERAL

For the Blue Gill event on 26 October 1962, data showing effects of the event were obtained at nine sites; Canton showed no effect, and Fairbanks and Rarotonga records were unreadable at event time.

Figures 4.1 through 4.4 show the diurnal phase and amplitude data for event day and selected background days. Figures 4.5 through 4.9 show phase and amplitude details from 20 minutes before until 2 hours after the event. (All figures are given at the end of this chapter.)

The Blue Gill event occurred at 0959:48 GMT. Ground sunrise at NBA occurred at 1108 GMT. From 1004 to 1007, NBA transmitted a key-down (CW) signal; it was off from 1007 to 1010. For the remaining 54 minutes of each hour, the duty cycle was 0.3.

4.2 OKINAWA

The diurnal amplitude and phase variations of the received NBA signal at Okinawa for three consecutive days ending with that of the Blue Gill event, plus the second day after the event, are shown in Figure 4.1. The first day afterward is not shown, because adjustment to the oscillator disrupted phase data. Midpath midnight is at 1100. The amplitude curves, though relatively low, show a fairly

uniform pattern without gross diurnal effect. The event effect is seen as a definite attenuation, followed by an early return to normal level.

The phase curves of these days are very similar. Unfortunately, no data were available for the period $H + 2$ to $H + 6$ hours, so the phase advance at H had to be assumed (this was done in preference to showing a retardation of 0.6π at H) to bring the effect into some conformity with that observed on the Palo Alto path (shown in Figure 4.2). As can be seen in Figure 4.1, the H to $H + 2$ -hour data could be reasonably plotted up 2π radians. After the marked advance at H , the event curve shows indications of returning toward normal by $H + 2$ hours. The phase compares well with the background after $H + 6$ hours.

Phase deviation and amplitude at event time are shown in detail in Figure 4.5 for the Okinawa path. Signal amplitude was fading just before the event, and had reached 0.5 times its previous static level by $H - 0$. (Amplitudes are referenced to the average level between $H - 20$ minutes and $H - 1$ minute.) A further attenuation occurred at H , to about 0.1 of the average level. Signal level then gradually increased to its former value by the end of the off-period, at $H + 10$ minutes.

On the phase-deviation detail curve, an initial advance of 1.8π has been shown from H to $H + 3$ minutes, then a slight recovery to about 1.6π by $H + 10$ minutes. Phase deviation changes little between $H + 10$ and $H + 60$ minutes; it gradually advances to about 2π at

H + 80 minutes, and recovers toward the average characteristic curve between H + 90 and H + 100 minutes. Recovery is checked after H + 100 minutes, probably by the sunrise effect.

4.3 PALO ALTO

The diurnal amplitude and phase variations in the received NBA signal at Palo Alto are shown in Figure 4.2 (top) for four consecutive days, beginning with the day before the Blue Gill event. Midpath midnight was taken at 0800 GMT. No diurnal variation is apparent in the amplitude curves. The event-day data match those for the other days, after H + 1 hour. There is attenuation at H, recovery to normal, a second attenuation, and final recovery in signal level during the first hour after the event.

The diurnal phase curves show considerable spread in Figure 4.2, probably indicating that conditions were unstable at midnight for this path (note that the greatest spread in amplitude curves is near midnight). Thus, misalignment is probably the reason for the apparent long-term advanced phase effect in the event-day phase curve. The curve for 28-29 October is near to an average characteristic for the period of a week about the event. The event curve follows this in diurnal effect from about H + 1 to H + 6 hours, after recovering quickly from a sharp phase advance at H.

Details of phase deviation and amplitude at event time are shown in Figure 4.7. The receiver was off for about 1 minute prior to the

event. In reference to the pre-event level, amplitude is attenuated to 0.2 immediately after the event, then rises swiftly to 1.5 by H + 4 minutes, where the level remains until H + 7. After the signal reappears, it decreases fairly rapidly to less than 0.1 at H + 15 minutes. Another quick rise before H + 20 minutes brings the level to about 0.6, where it remains until H + 30 minutes. By H + 50 minutes the signal level is about 1.5; it remains there through H + 2 hours.

The phase deviation shows an initial phase advance of 1.9π at H, followed by gradual recovery to 1.3π by H + 15 minutes and more rapid recovery to 0.9π by H + 20 minutes. There is a pause in recovery between H + 20 and H + 40 minutes, and the return to normal occurs fairly quickly between H + 40 and H + 60 minutes.

4.4 WAKE

The diurnal amplitude and phase variations in the received NBA signal at Wake are shown in Figure 4.2 (bottom) for the days before, including, and after the Blue Gill event. Midpath midnight was taken at 1100 GMT. There is reasonable agreement among the phase curves, although amplitude data are widely spread. The assumption of the phase advance at H + 0 is seen to so orient the phase curve that it begins to follow the sunrise effect by H + 2 hours and continues to vary approximately with the background for the rest of the day, although the hours from 1400 to 2000 GMT, when signal level

is consistently low, are represented by doubtful readings, or none at all. A retardation in phase could have been assumed at event time, in view of the gap in data after $H + 2.5$ hours, but the orientation shown is more consistent with data obtained over similar paths. The amplitude curves show little more than a diurnal trend; signal level is possibly below normal until about 2 hours after the event.

The phase deviation and amplitude detail are shown in Figure 4.7. The phase curve prior to H is drawn as an average of points scattered over about $\pm 0.1\pi$. Individual data points are connected after event time. Following an initial advance of about 1.8π immediately after H , phase recovers rapidly to about 1.2π by $H + 10$ minutes and then advances slightly between $H + 10$ and $H + 40$ minutes. Recovery to normal has apparently begun by $H + 1$ hour and is complete by $H + 2$ hours.

Amplitude is attenuated to less than 0.1 of pre-event (average) level at the time of the event and recovers to 0.75 almost immediately. The amplitude then falls off again, reaching a relative level of about 0.2 at $H + 4$ minutes. Another recovery of signal amplitude follows, resulting in an increase to 1.2 at $H + 20$. The level then returns to about 0.5 between $H + 40$ and $H + 100$ minutes. Another increase has begun by $H + 2$ hours, but it is probable that diurnal effect predominates by this time.

4.5 KAUAI

Figure 4.3 (top) shows the diurnal amplitude and phase characteristics of the received NBA signal at Kauai from two days before to one after the event. Midpath midnight is at 0900 GMT. The background signal-amplitude level shows a relatively narrow spread between curves; there are indications that the signal level for event day is consistently low. Absence of marked diurnal variation in all the amplitude curves is notable, as is the enhancement which follows the event. Amplitude average was below normal before the event, increased to about normal level just after the event, and returned to a relatively low level for most of the day.

Diurnal phase comparison is fairly reasonable for all days except that prior to the event, when an adjustment was made to the oscillator. For this reason, 23-24 October was added to give a better idea of the normal phase characteristic. For this data it was obvious from drift-slope variation that an advance in phase of less than one cycle occurred at H, and the orientation shown--with phase behaving normally by H + 2 hours--is deemed correct, although the spread in phase data is considerable at certain hours of the day.

The phase-deviation and amplitude detail curves are shown in Figure 4.8. Occasional periods of high noise level obscured signal on the record, notably between H - 30 minutes and H - 0; readings in this period should be averaged. An increase in signal level at event

time reaches 1.7 times the pre-event level by $H + 1$ minute. Amplitude remains constant until $H + 15$ minutes and shows slight variations about this same level until $H + 1$ hour. By $H + 2$ hours the amplitude has returned to pre-event level.

The phase deviation prior to event time shown in Figure 4.8 for Kauai represents an average of readings spread over $\pm 0.05\pi$. All data after H are represented by the phase curve. An immediate phase advance of 0.8π at H is followed by a very rapid partial recovery to 0.4π at $H + 1$ minute. Phase is fairly constant to $H + 6$ minutes, followed by another advance to 0.6π by $H + 15$ minutes, and gradual return to normal by about $H + 1.5$ hours.

4.6 SOUTH POINT

The diurnal amplitude and phase variations for the received NBA signal at South Point are shown in Figure 4.3 (bottom) for three consecutive days about the Blue Gill event. There is considerable spread in the amplitude readings for this period, with only a general diurnal trend apparent. The signal on event day reaches an unusually high level between $H + 0.5$ and $H + 1.5$ hours, but seems to follow the general diurnal aspect otherwise. Low signal levels on the event-day record (at frequent intervals) and the loss of data from H to $H + 20$ minutes limit the value of these data.

The diurnal phase curve for the event day shows obvious scatter in the data. Phase was apparently beginning to recover when next

seen after the event, and the diurnal sunrise effect predominates by H + 2 hours.

The details of amplitude and phase deviation at South Point are shown in Figure 4.8. In terms of the pre-event level, the amplitude curve shows an enhancement from 1.0 at H + 19 minutes, when the equipment was reset, to 2.0 at H + 25 minutes. Near-constant signal level was received until H + 65 minutes. The remaining data show a decreasing trend toward H + 2 hours.

The phase-deviation data show the phase advanced by about 0.4π when next seen after the event (H + 19 minutes); the advance continues to about 0.6π at H + 25 minutes. Recovery has begun by H + 30 minutes and is complete by H + 1 hour.

4.7 ROI-NAMUR

The diurnal amplitude and phase of the received NBA signal at Roi-Namur for four days around the Blue Gill event time are shown in Figure 4.4 (top). Midpath midnight was taken at 0900 GMT. Amplitude on event day begins higher than normal average (a continuation of a high level on the day before). Attenuation occurs during the first hour after the event, then a return to a slightly high level. Attenuation through the morning hours has brought it to about normal, but the curve falls below the usual diurnal effect near noon and continues to remain below normal for the rest of the day. The event-day data contain many gaps.

The phase curves do not present a very repeatable pattern for this period, as the oscillator drift was relatively high, tending to obscure diurnal effects. The assumption that a phase advance of less than one cycle occurred at H produces the best fit in the data, considering all aspects. The event-day data show that normal diurnal effects begin to predominate by H + 2.5 hours, although phase seems advanced from normal until about H + 14 hours. Reliability of these data is somewhat impaired by low signal recording level and the high oscillator drift.

Amplitude and phase-deviation details at Roi Namur are shown in Figure 4.6. Consideration of the amplitude data should be based on an average curve through the data points shown. The amplitude data show a sharp attenuation at H to about 0.35 of the pre-event level, and a gradual increase to 0.9 at H + 30 minutes. The signal then decreases to 0.6 at H + 40 minutes and again increases to 1.3 by H + 1 hour, remaining approximately constant to H + 2 hours.

Points on the phase-deviation curve between H - 4 and H + 4 minutes represent an average phase. Scatter is $\pm 0.1\pi$ before and $\pm 0.4\pi$ after H, about the curve shown. From H + 4, where the CW signal was transmitted, the curve is drawn through all data points. Immediate phase advance at H is of the order of 1.4π , with partial recovery to a definite 1.2π at H + 4 minutes. Another advance has occurred during the off period, to 1.8π by H + 10 minutes, and continues to about 2π by H + 20 minutes. Recovery is gradual from

then until about $H + 2.5$ hours, when sunrise effect begins to predominate.

4.8 TUTUILA

The diurnal amplitude and phase variations of the received NBA signal at Tutuila for three consecutive days surrounding the Blue Gill event are shown in Figure 4.4 (bottom). Midpath midnight is at 1000 GMT. The diurnal amplitude curves for the days shown follow a fairly close pattern. An amplitude disturbance is in evidence at event time, followed by data points scattered about a general enhancement of signal for nearly 3 hours.

The diurnal phase variation on event day also follows closely that of the background days after $H + 4$ hours, but shows a considerable deviation in advance of normal from H to $H + 3$ hours. Recovery is rapid between $H + 3$ and $H + 4$ hours. Data on the records were somewhat doubtful from $H + 3$ to 4 hours, but indications of a rapid return were found.

Amplitude-and-phase-deviation details at Tutuila are shown in Figure 4.5. Signal level is dropping before the event. There is very little change at H , followed quickly by a swift increase to 2.0 times the average pre-event level at $H + 1$ minute. Amplitude then continues to rise to 3.0 by $H + 5$ minutes. When signal is regained after the off-period, the level has dropped to about 2 again, but it increases to about 3.4 for the interval between $H + 18$

and H + 55 minutes. There is attenuation to 1.5 near H + 1 hour, followed by enhancement to 3.5 at H + 2 hours. Signal amplitude has returned to normal by H + 3 hours.

After an initial sharp advance of 1.7π at event time, phase deviation recovers slightly to 1.5π at H + 18 minutes and then advances gradually to 1.8π by H + 45 minutes, where final recovery begins. Recovery is gradual until about H + 3 hours, then rapid from H + 3 to H + 4 hours, after which phase appears normal.

4.9 VITI LEVU

All attempts to obtain consistent, repeatable diurnal phase and amplitude curves for the Viti Levu NBA data around the time of the Blue Gill event were unsuccessful. A drift-slope could not be obtained; however, it is certain that the drift-slope is negative and probably less than 0.3π radian per hour. Details of amplitude and raw-phase data from Viti Levu are shown in Fig. 4.6. The amplitude curve shows a sharp attenuation at event time to 0.3 of the pre-event level, followed by a rapid rise to about 1.2 by H + 10 minutes. The signal level is then constant until about H + 1 hour, when a decrease toward normal by H + 2.5 hours begins.

The raw-phase curve shows an advance of 1.8π immediately following the event (this has been assumed in preference to a phase retardation of 0.5π --the data do not indicate which may be correct). This condition is maintained, essentially, throughout the period

shown, and phase does not return toward pre-event condition until about $H + 6$ hours.

4.10 MIDWAY

The phase and amplitude data for the NBA signal received at Midway for the Blue Gill event showed a somewhat reasonable diurnal pattern with considerable spread from day to day at the hours around and following the event. It was impossible to infer a normal background at event time. Therefore, no diurnal data are shown and no phase-deviation comparison is made. The amplitude and normalized-phase details for the Blue Gill event data at Midway are shown in Figure 4.9. Phase data are normalized to an oscillator drift-slope of -0.4π radian per hour. Prior to the event, the phase data points are scattered $\pm 0.2\pi$ around the average curve shown in Figure 4.9.

The phase curve is drawn through all points after the event. The signal level is low throughout the period shown, however, so that a reading error of $\pm 0.2\pi$ should be assumed. At event time, there is phase advance of 0.8π , followed by rapid partial recovery to 0.5π at $H + 1$ minute. It is probable that a gradual phase recovery then starts and is complete by $H + 1$ hour. It is uncertain when phase approaches the normal diurnal characteristic because of the lack of good background phase data for comparison.

Signal amplitude recorded at Midway for this event resulted in extremely low recording levels. The amplitude data shown do indicate

a small attenuation at event time, followed by an enhancement to 1.2 of the pre-event value at H + 5 minutes. The signal had probably returned to pre-event level by H + 15 minutes.

4.11 SUMMARY

The effects of the Blue Gill event on the received NBA signal can be seen in data from nine of the twelve sites. Canton showed no effect, and Fairbanks and Rarotonga did not obtain data at event time. The Blue Gill event occurred at 0959:48 GMT, and ground sunrise at NBA occurred at 1108 GMT, allowing only 1 hour before sunlight had begun to influence all propagation paths.

Signal amplitude, in general, showed an immediate attenuation at event time, followed by an enhancement within H + 5 minutes. At Roi-Namur and Wake, this enhancement did not occur; however, signal amplitude had returned to normal by H + 30 minutes. At Okinawa, the signal enhancement resulted in a return to pre-event signal level by H + 10 minutes. Enhanced signal amplitude was maintained for about 1 hour at Viti Levu, Tutuila, Kauai, and South Point before a return to pre-event levels. At Palo Alto, a second attenuation occurred at H + 15 minutes, resulting in the minimum signal recorded following the event. Recovery was complete in less than 1 hour.

Phase of the NBA signal apparently showed an immediate advance at all stations that recorded an effect. Recovery appears to be complete within 2 hours, when sunrise effects start, except for data at Viti Levu and Tutuila, where the return to normal does not occur until H + 4 hours.

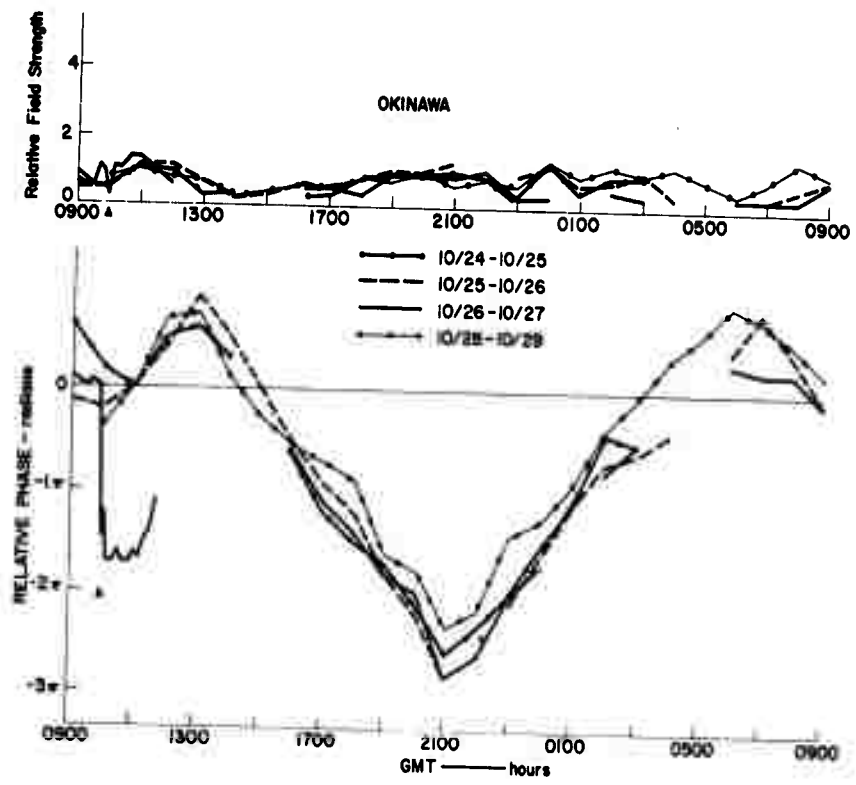


Figure 4.1 Diurnal amplitude and phase at Okinawa, Blue Gill.

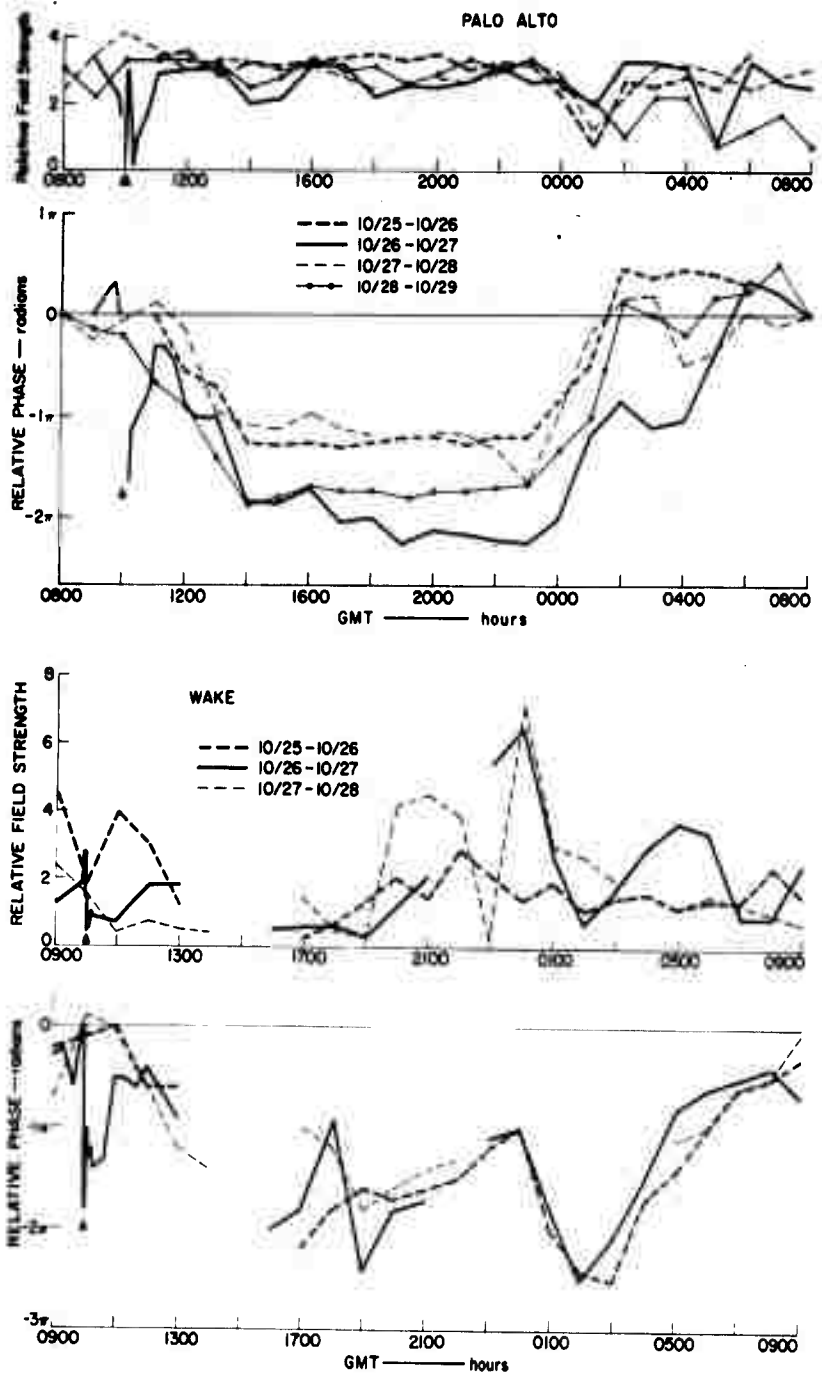


Figure 4.2 Diurnal amplitude and phase at Palo Alto and Wake, Blue Gill.

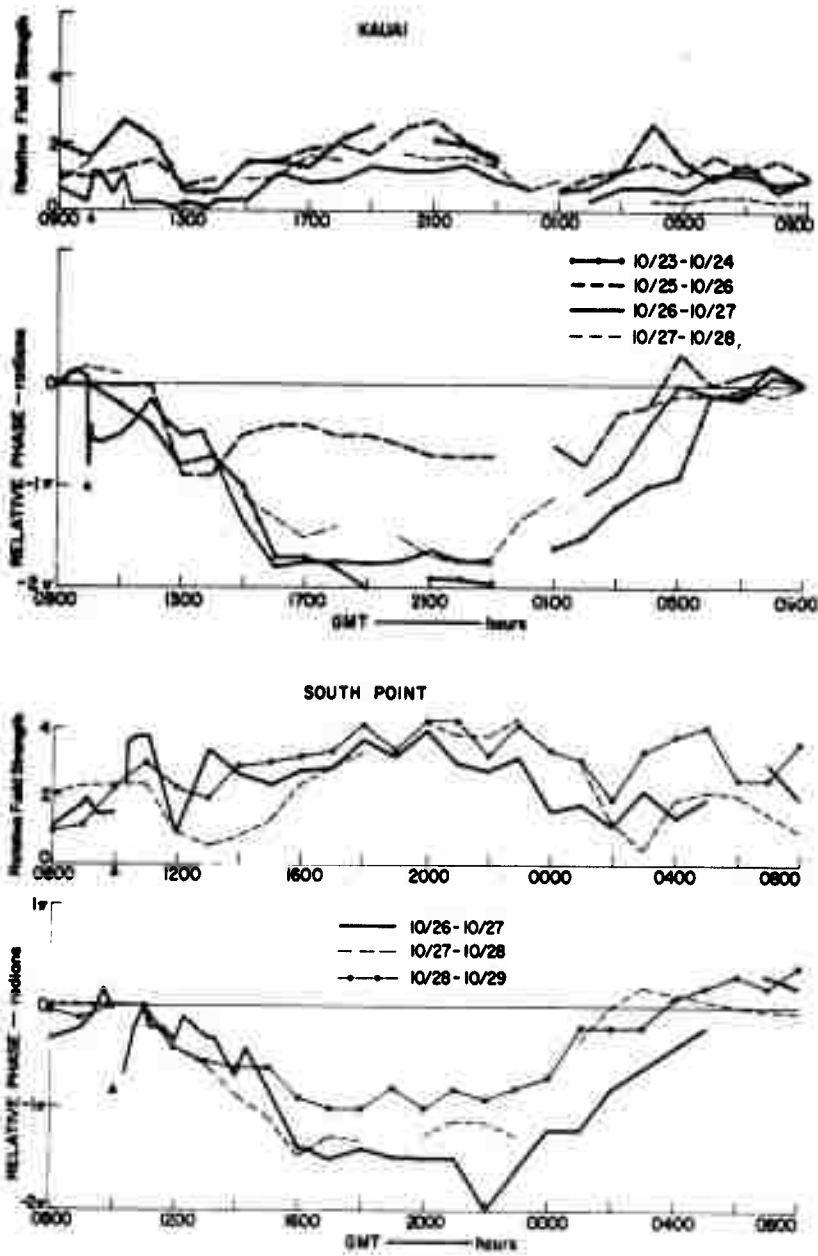


Figure 4.3 Diurnal amplitude and phase at Kauai and South Point, Blue Gill.

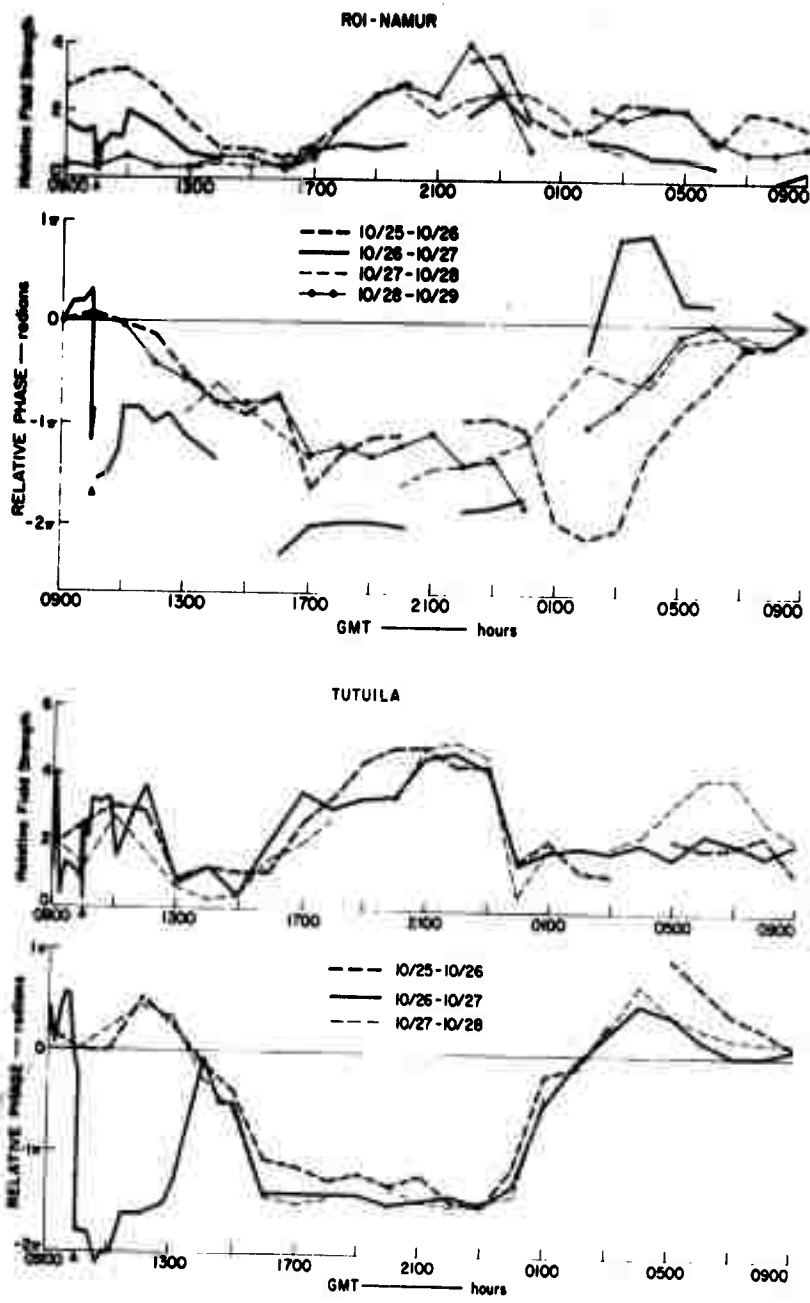


Figure 4.4 Diurnal amplitude and phase at Roi-Namur and Tutuila, Blue Gill.

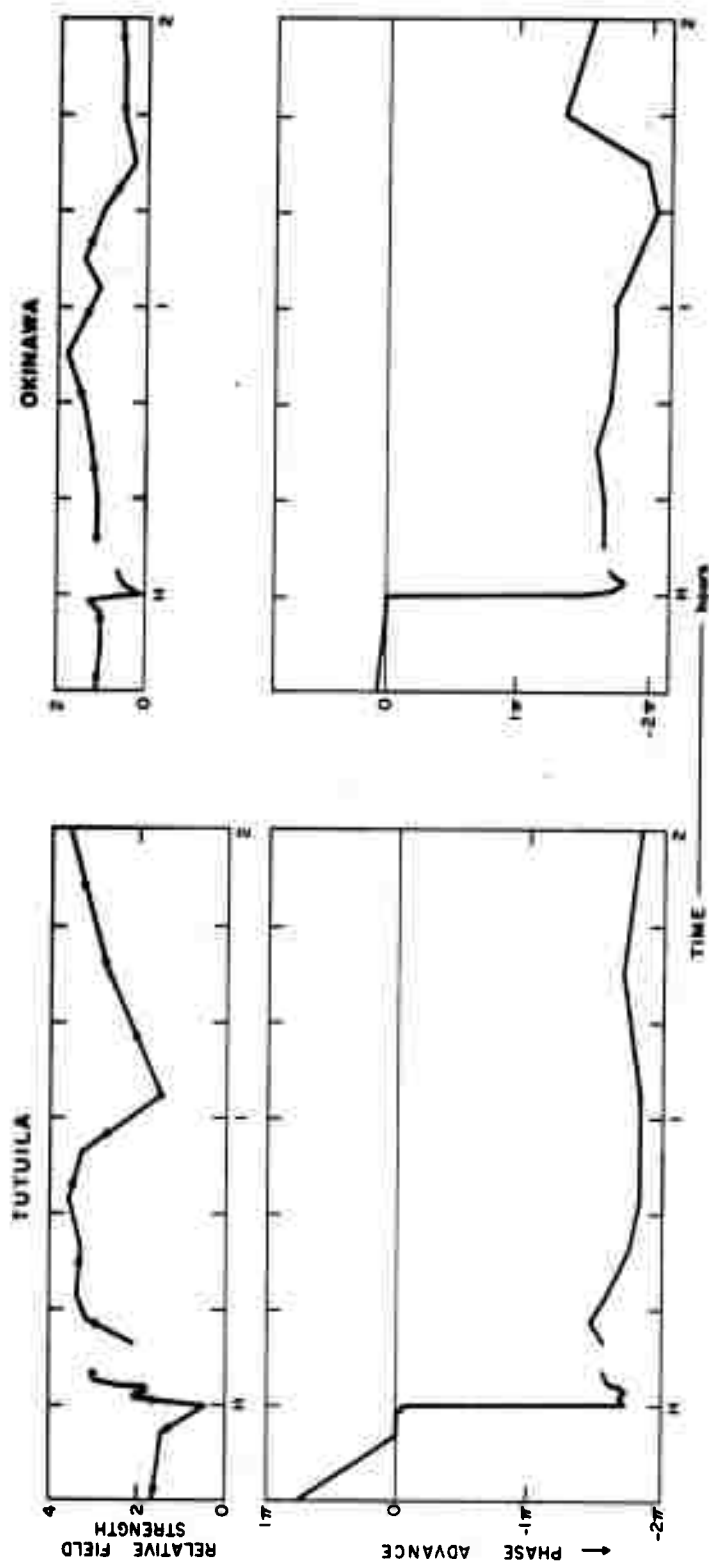


Figure 4.5 Amplitude and phase detail at Tutuila and Okinawa, Blue Gill.

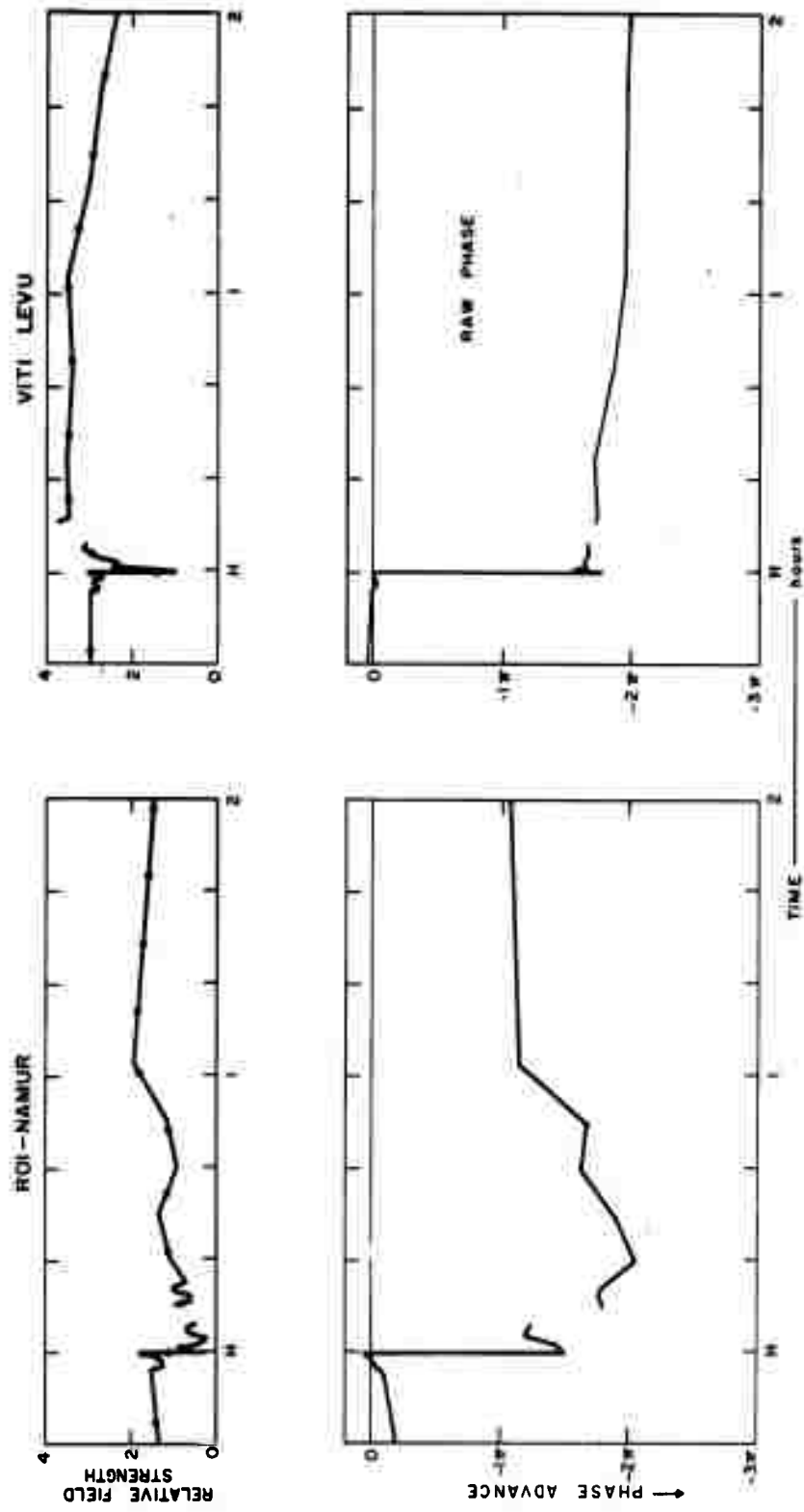


Figure 4.6 Amplitude and phase detail at Roi-Namur and Viti Levu, Blue Gill.

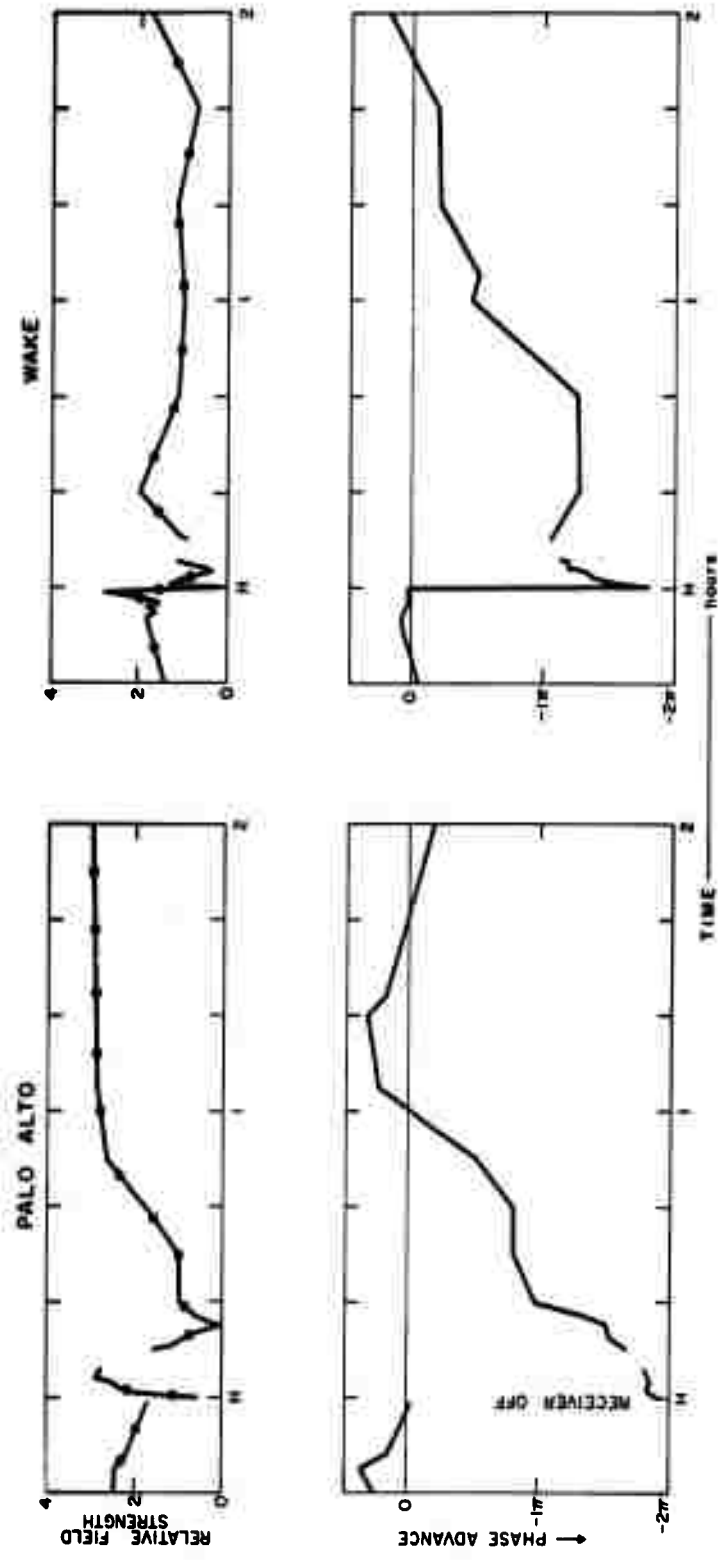


Figure 4.7 Amplitude and phase detail at Palo Alto and Wake, Blue Gill.

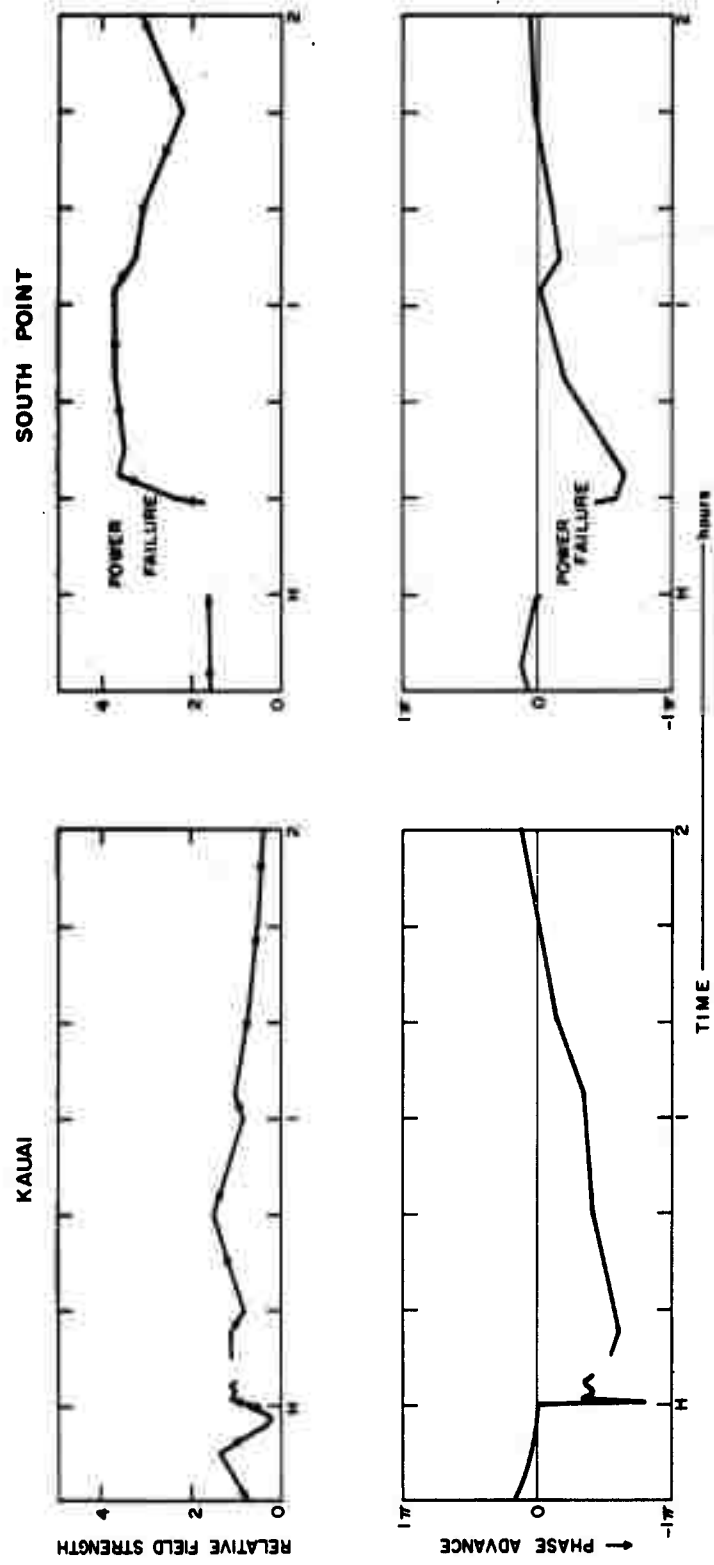


Figure 4.8 Amplitude and phase detail at Kauai and South Point, Blue Gill.

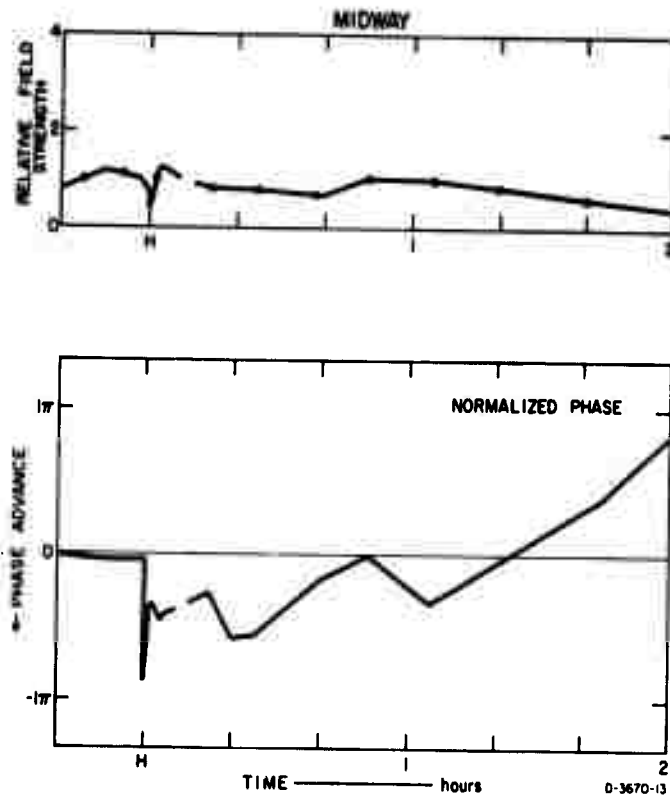


Figure 4.9 Amplitude and phase detail at Midway, Blue Gill.

CHAPTER 5

KING FISH

5.1 GENERAL

For the King Fish event on 1 November 1962, records were obtained from all receiver sites except Palo Alto. Effects of the event were apparent on all except Canton, Midway, Okinawa, and Rarotonga records.

The NBA transmitter was off the air, in its usual sequence, from 1207 to 1210; the King Fish event occurred at 1210:06 GMT. Average response time for the data system was 0.2 minute, so the first effects of the event would be obscured by the transition from noise level to signal level in most of the data. As a consequence, the data points at $H + 0$ minutes are actually at $H + 0.1$ minute, or later in cases where it was uncertain whether the system was responding rapidly enough. A gap has been left in the data curves to demonstrate this.

Ground sunrise at NBA for the King Fish event occurred at 1109 GMT, 1 hour before the event. Therefore, sunrise had already started to change propagation conditions on all paths by event time. Figures 5.1 through 5.3 show diurnal phase and amplitude data. Figures 5.4 through 5.7 show details of phase and amplitude from 20 minutes before until 2 hours after the event. (Figures are given at the end of this chapter.)

5.2 WAKE

The diurnal amplitude and phase variations of the NBA signal received at Wake are shown in Figure 5.1 for three consecutive days about the King Fish event. Midpath midnight was taken at 1100. The diurnal amplitude data for the period show fairly good agreement throughout most of the day, and a definite diurnal variation. In the event-day data, there is significant deviation from the normal level between H and H + 1 hour, when sig ' is attenuated drastically, and essentially lost for almost an hour.

The phase curves show a consistent diurnal behavior. The most notable feature of the event phase curve is the very large advance that was assumed at event time. It is not necessary to insert more than one cycle of advance to bring the data for the day into correspondence with the background. (Since the data at H + 1 minute are isolated from those taken during the rest of the day, they can be oriented without consideration of drift-slope) However, the data after H + 1 hour which indicate that phase is recovering from a drastically advanced position are governed by drift-slope orientation.

Details of amplitude and phase deviation at Wake are shown in Figure 5.7 for the immediate period about the event. The amplitude detail shows attenuation to 0.5 of the pre-event level immediately after H, abrupt increase to 0.7 at H + 0.5 minute, and a rapid decrease through 0.35 at H + 1.5 minutes. Signal has been lost by H + 2 minutes and does not return to a readable level until

H + 55 minutes. The signal level rises to 0.6 by H + 75 minutes and begins to fluctuate about the normal level for this hour, rising above normal level between H + 105 minutes and H + 3 hours.

The phase-deviation curve has been drawn to show an extreme advance of 4.2π immediately after H, but the portion of the phase curve between H and H + 1.5 minutes could be oriented at 2.2π or 0.2π without affecting the shape of the rest of the curve. The curve has been oriented as shown because no large advance occurring late after the event was found in the data from the other sites in the same general area of the Pacific. The initial advance shown is consistent with the recovery seen after H + 55 minutes. At H + 55 minutes, phase is seen to be recovering from an advance of at least 2.9π ; it continues to recover, reaching normal phase conditions by H + 4 hours.

5.3 KAUAI

The diurnal phase and amplitude of the NBA signal received at Kauai are shown in Figure 5.2 (top) for four consecutive days about the King Fish event. Midpath midnight was taken at 0900 GMT. The amplitude data show consistent daily behavior for all days shown, and some diurnal variation is apparent. The event-day curve shows no significant deviation from normal except for the enhancement at event time and a return to normal within 1 hour.

The diurnal phase curves show a large spread in the readings taken during the daylight hours, but conform well enough before 1400

to permit deviation comparison. The phase curve for 2-3 November falls near the average for the weekly period about the event. Drift-slope considerations imply a phase advance on event day. Phase recovers from a large advance at H to almost normal, then advances to a nearly constant position, and remains there until diurnal effect causes further advance near H + 3 hours. Coincidence with the normal position of advance occurs by H + 2 hours.

Details of phase deviation and amplitude for the event period are shown in Figure 5.5. System response for this site and event was changed to about 0.1 minute. Amplitude variation, in relation to the H - 3-minute level, shows enhancement to 2.5 immediately after the event, a decrease to 1.2 at H + 1 minute, and a return to 2.6 at H + 2 minutes. The level falls gradually to about 0.5 by H + 30 minutes, then begins to vary normally.

The phase-deviation data show phase returning from an advance of at least 1.6π immediately after the event and a very rapid recovery to 0.4π at H + 1.5 minutes. There is little change in deviation until H + 10 minutes, then an advance to 0.6π occurs by H + 20 minutes. Very gradual recovery after H + 20 minutes brings phase to normal by H + 2 hours.

5.4 SOUTH POINT

The diurnal amplitude and phase variations at South Point are shown in Figure 5.2 (bottom) for three consecutive days about the

King Fish event. Midpath midnight was taken at 1000 GMT. There is good agreement during the morning among the diurnal amplitude curves shown, but considerable spread is apparent in the afternoon and near midnight. The diurnal variation is clearly evident. The amplitude curve for event day shows little deviation from normal in the hours near the event, but the fluctuation just after event time is notable, showing short-term enhancement following the probable attenuation at H.

The diurnal phase curves show fairly good day-to-day agreement throughout much of the day. There is some spread in the afternoon which may be attributed to low signal level. The phase data for the event day actually show an advance at H, and there is a further advance near H + 30 minutes. After that, diurnal effect seems to predominate, but phase remains advanced until H + 6 hours.

Details of phase deviation and amplitude are shown in Figure 5.5 for South Point. In reference to the level at H - 5 minutes, amplitude shows attenuation immediately after the event to 0.3, rises abruptly to 0.7 at H + 0.3 minute, and continues rising to 1.6 at H + 1 minute. The signal then drops to 1.0 at H + 1.5 minutes, remains there for 2.5 minutes, then drops to 0.15 at H + 10 minutes, and fluctuates about the normal level for the remainder of the day.

The phase-deviation curve shows a rapid advance immediately after H of 0.8π by H + 0.5 minute, slight recovery to 0.6π at H + 3 minutes, advance to 0.8π at H + 3.5 minutes, and a further advance to

about 1.0π by H + 30 minutes, where recovery begins. Phase has recovered to within about 0.4π of normal by H + 55 minutes, but remains slightly advanced until H + 6 hours.

5.5 VITI LEVU

The diurnal phase and amplitude variations of the NBA signal received at Viti Levu are shown in Figure 5.3, for King Fish event day and the following day. Midpath midnight was taken at 1000 GMT. There is considerable day-to-day spread in the diurnal amplitude data, but a diurnal characteristic variation is readily apparent, since signal level is relatively high. Considerable attenuation is shown in the event data after H, for about 1 hour, until diurnal effects bring the curves into near coincidence. The large attenuations at 1700 and 2200 GMT on event day have no known significance.

The diurnal phase curves show spread in the data during the daylight hours for a number of days near the event period. Behavior in the early morning hours was sufficiently consistent to allow a deviation comparison. The large phase shift in the event curve at H is implied in the data, mainly by drift-slope considerations, but there is also good correlation with the background variation between 1400 and 1700 GMT. (The curve for 2-3 November is approximately characteristic of the usual diurnal variation during these hours.)

Details of phase deviation and amplitude are shown in Figure 5.4 for the immediate event period. In reference to the level at H - 5

minutes, amplitude undergoes an attenuation to 0.3 immediately after the event, holds that level until H + 2 minutes, and then decreases slightly to 0.27 at H + 2.5 minutes. From H + 2.5 to H + 35 minutes, the level increases gradually to about 0.4, held until H + 55 minutes. Signal level is near normal between H + 75 and H + 95 minutes, but increases again after H + 115 minutes.

The phase-deviation curve shows an advance of 1.6π immediately after H, then slightly more advance until H + 2 minutes, where a rapid retardation occurs, to 1.3π at H + 3.5 minutes. There is abrupt advance to 1.5π at H + 5.5 minutes, where recovery begins rapidly; it continues more gradually after H + 14 minutes (0.8π) until H + 55 minutes, to 0.2π , which is near normal. The advance after H + 55 minutes is probably caused by normal diurnal changes. The phase remains advanced from normal until about H + 3 hours.

5.6 FAIRBANKS

At Fairbanks the local frequency standard was adjusted 40 minutes prior to the King Fish event, so oscillator drift-slope is in doubt for the immediate period of the event. Recording level was low on this record. In addition, system recovery after the transmitter off-period (H -3 minutes to H) is apparently slow, so readings before H + 1 minute could not be used. Phase points throughout the period of the event show a scatter of $\pm 0.1\pi$; amplitude points are scattered as well.

Amplitude detail and phase data in raw form for the NBA signal received at Fairbanks are shown in Figure 5.4. With reference to the pre-event level, and assuming an average through the amplitude curve shown, the signal level drops to about 0.5 between H + 1 and H + 2 minutes. There is an apparent recovery to about 0.9 between H + 3 and H + 4 minutes; then the average level drops to about 0.6 between H + 4 and H + 12 minutes, and rises to 1.0 between H + 12 and H + 16 minutes. Another decrease follows, to about 0.7 by H + 30 minutes. The level rises from there to about normal by H + 1 hour. The general effect between H and H + 1 hour is a 30-percent decrease in signal level and a return to normal.

An average is assumed through the phase curve shown; there is apparently no change in phase through the event, with an advance of about 0.3π occurring very rapidly between H + 1 and H + 2 minutes, followed by immediate recovery to about 0.15π at H + 3 minutes. The data show a gradual phase advance for about 3 hours, which seems to be normal sunrise effect. A phase variation between H and H + 1 hour, attributable to the event, seems to be superimposed on the long-term advance effect.

5.7 ROI-NAMUR

Slope variation was established for the days through the King Fish event, but background data showed too much inconsistency for meaningful comparisons. Figure 5.6 shows the amplitude and normalized

phase details of Roi Namur data. The phase data have simply been normalized to the drift-slope of -0.98 radian per hour. Scattering of phase points after the event, in the period when signal is low, indicates that the true phase curve is probably an average drawn through the data shown. If an average variation is assumed, the initial phase advance is about 1.2π , with a probable further shift to some 1.6π between $H + 1$ and $H + 6$ minutes (rapid enough, possibly, to be considered a second stage of the initial advance). Partial recovery occurs from there to about 1.5π by $H + 15$ minutes; then very slow final recovery follows. Data are lost from $H + 115$ minutes to $H + 5$ hours, so that recovery time is uncertain, but less than 5 hours. The advance at H was assumed in lieu of showing a 0.8π retardation; either is possible in view of the gap in data after $H + 2$ hours.

The amplitude-detail curve shows, relative to the pre-event level, an attenuation at event time to about 0.2, a gradual increase to about 0.3 by $H + 15$ minutes, and then no appreciable change through $H + 115$ minutes. The level coincides with normal background by $H + 20$ minutes, since signal is usually attenuated during this period of the day.

5.8 TUTUILA

Background diurnal phase characteristics for the period about the King Fish event are too irregular to use for comparison, but

At the southern-area sites, effects were observed at Viti Levu and Tutuila, with the larger disturbance at Viti Levu indicating a well-defined conjugate-area disturbance. Phase at these two sites was advanced by the event, with recovery in about an hour. Amplitude was attenuated at event time, with a recovery and possible enhancement at Tutuila and continued attenuation at Viti Levu.

At northern-area sites, effects were observed at all sites except Midway, the Midway path being the farthest from the event area. Effects in the northern area are somewhat inconsistent, since South Point and Kauai give dissimilar results, and Wake and Roi-Namur have incomplete data. All northern sites show phase advances, with the largest effect observed at Wake, although the validity of the Wake data is doubtful.

Data are shown for a disturbance at Fairbanks, but no effect was recorded at Okinawa. The principal effect at Fairbanks is a signal attenuation accompanied by slight phase effect, which is somewhat unreasonable.

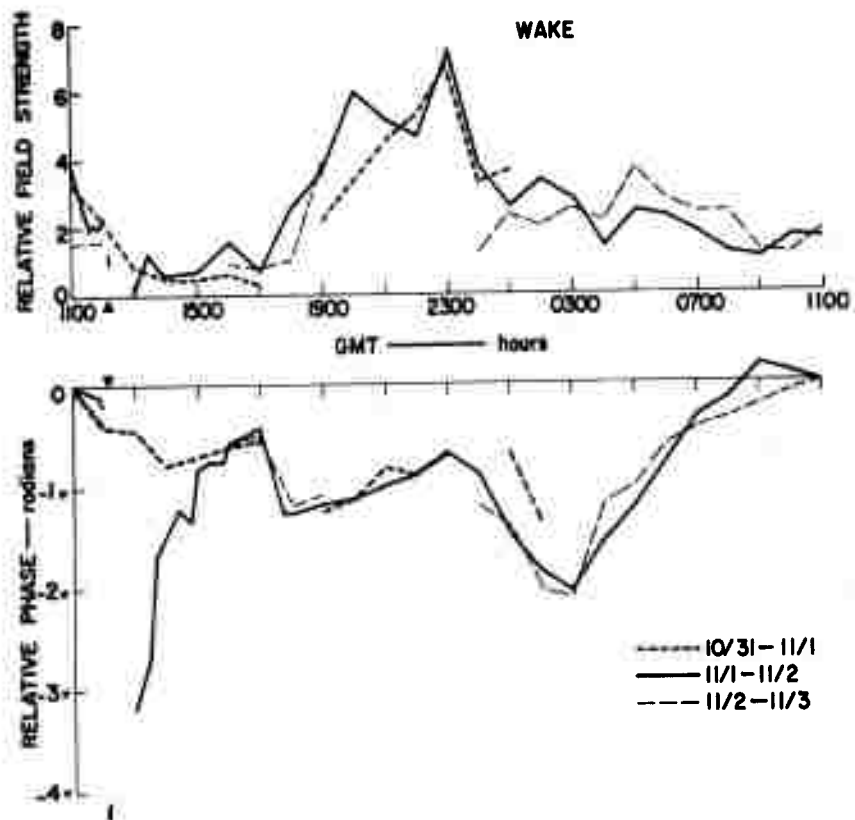


Figure 5.1 Diurnal amplitude and phase at Wake, King Fish.

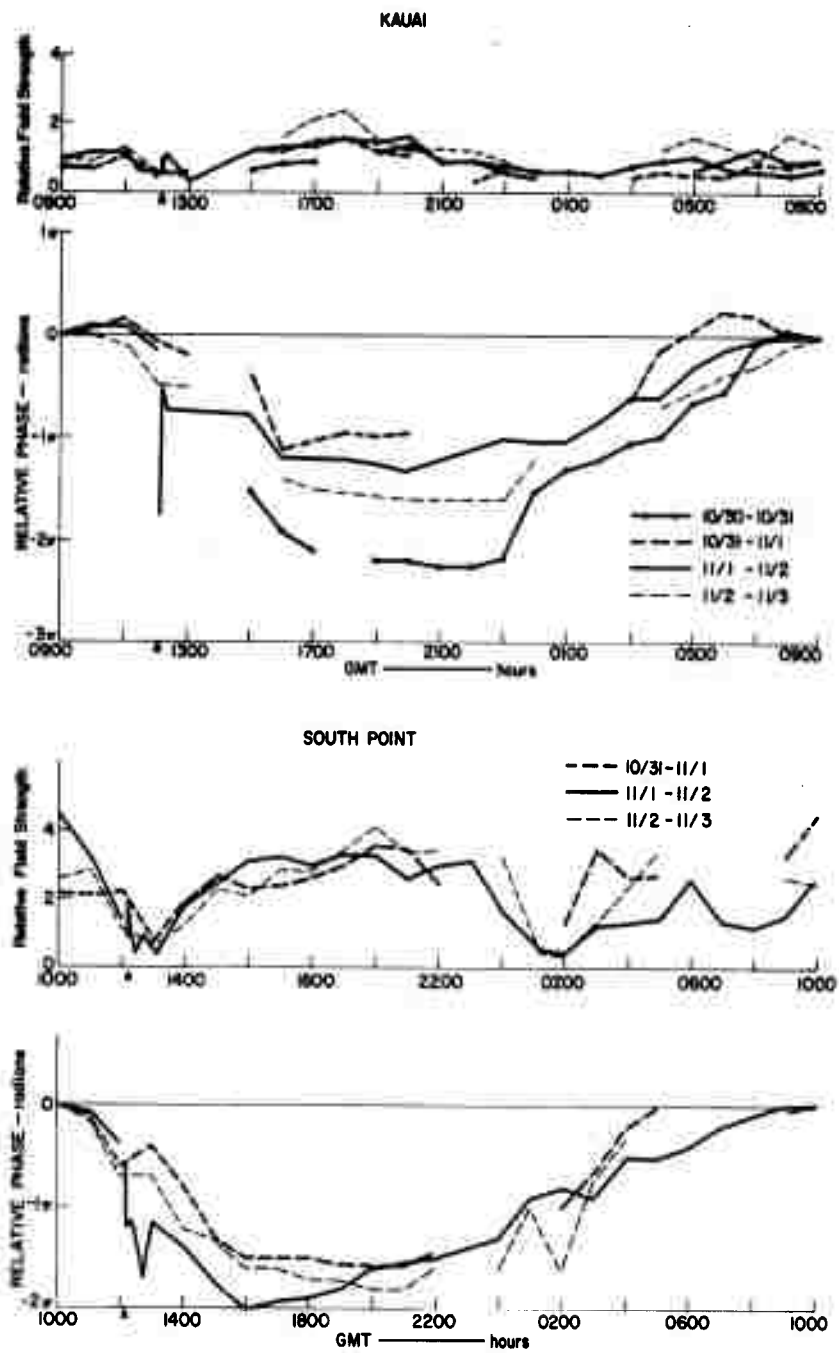


Figure 5.2 Diurnal amplitude and phase at Kauai and South Point, King Fish.

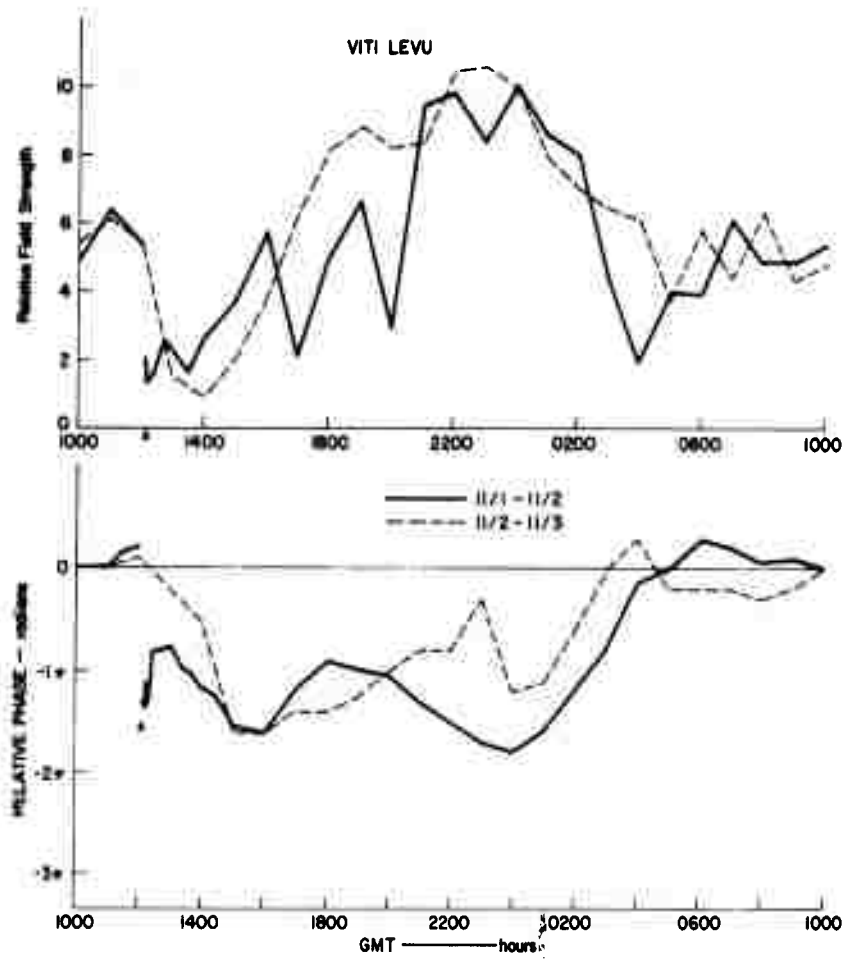


Figure 5.3 Diurnal amplitude and phase at Viti Levu, King Fish.

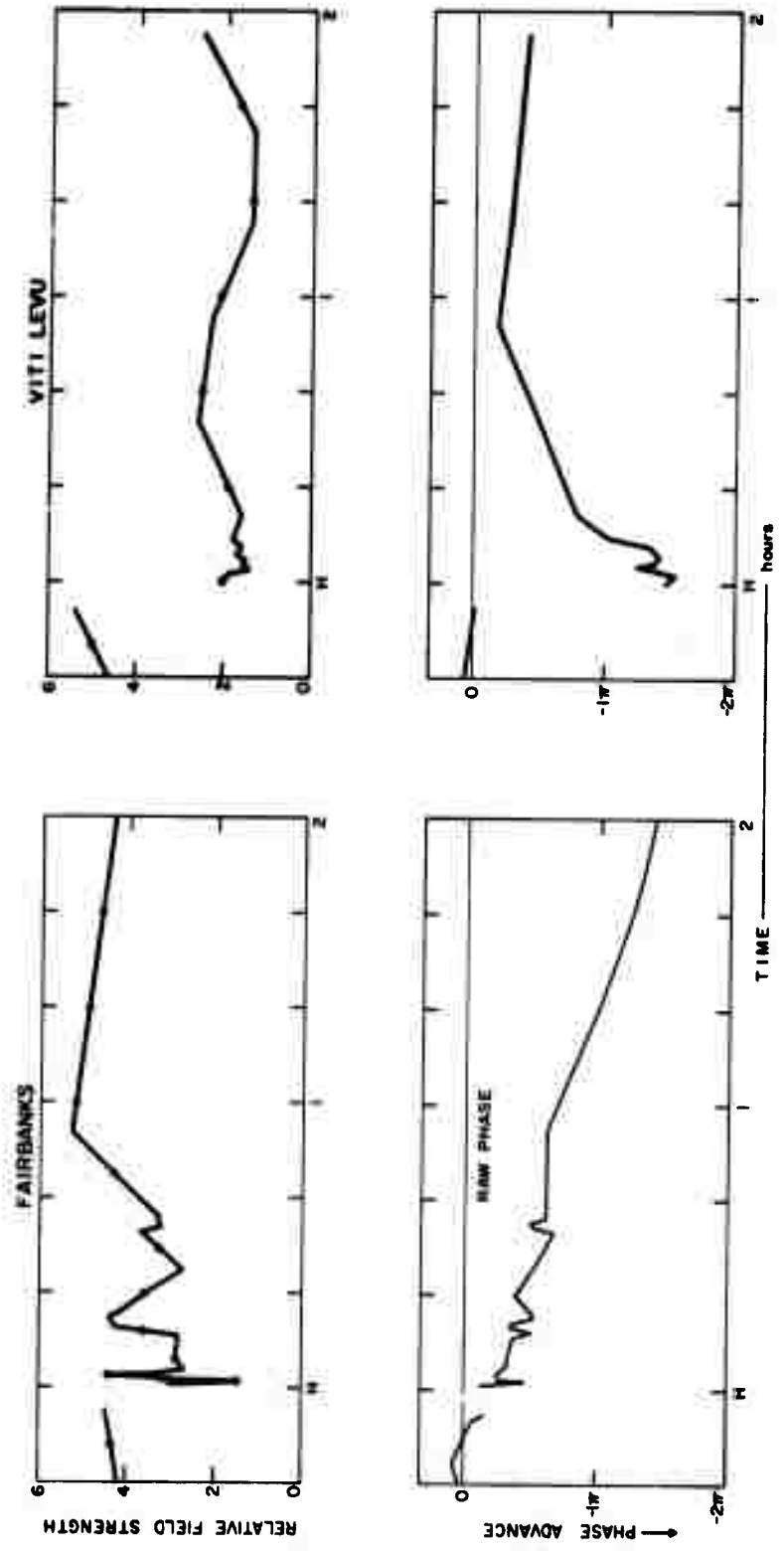


Figure 5.4 Amplitude and phase detail at Fairbanks and Viti Levu, King Fish.

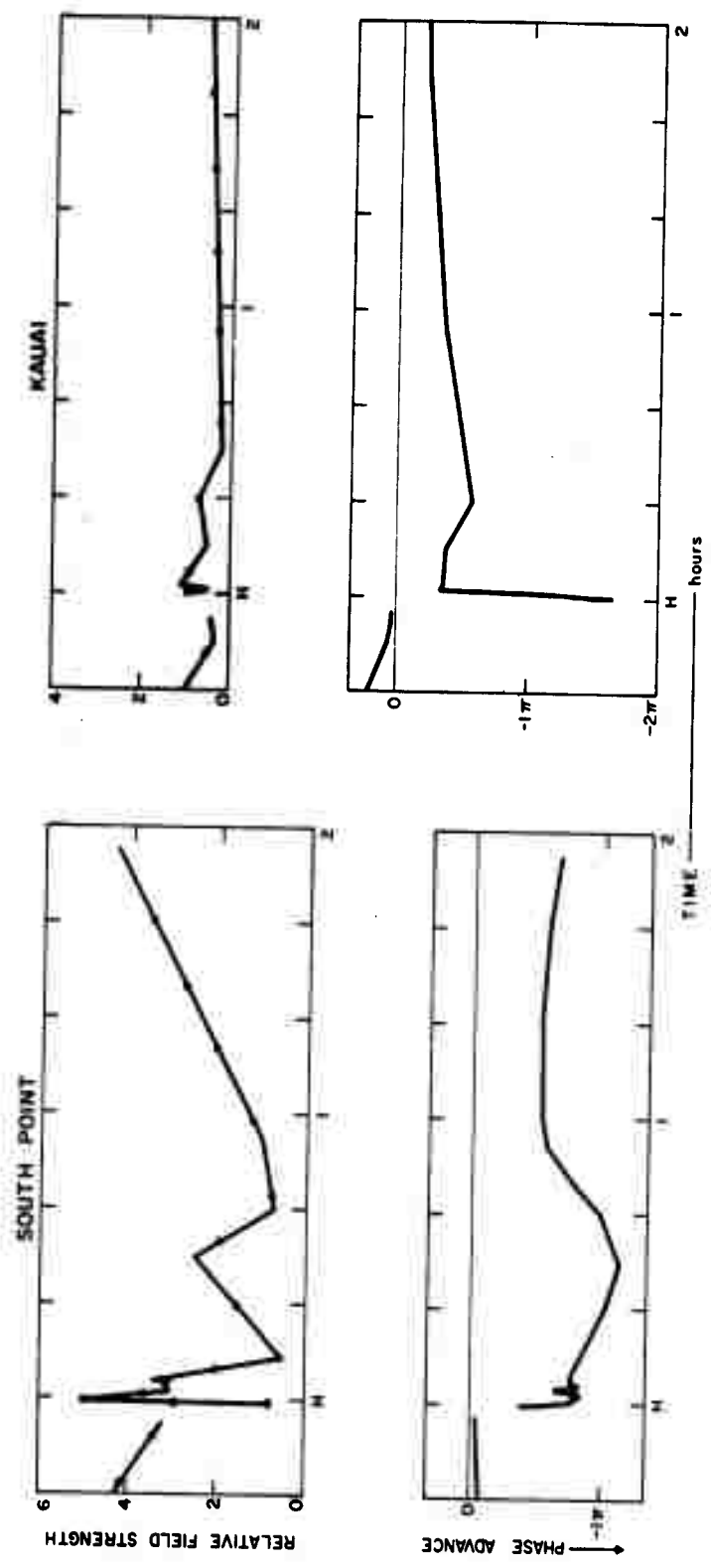


Figure 5.5 Amplitude and phase detail at South Point and Kauai, King Fish.

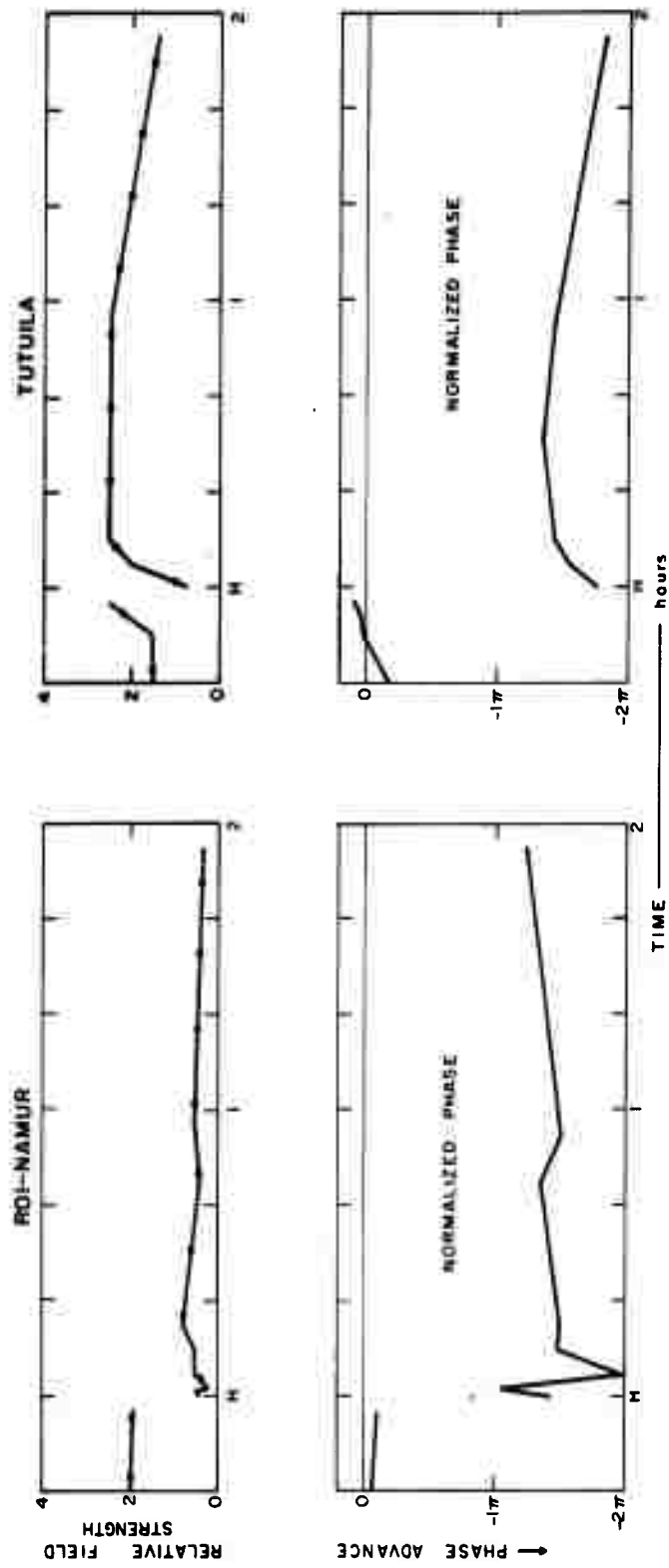


Figure 5.6 Amplitude and phase detail at Roi-Namur and Tutuila, King Fish.

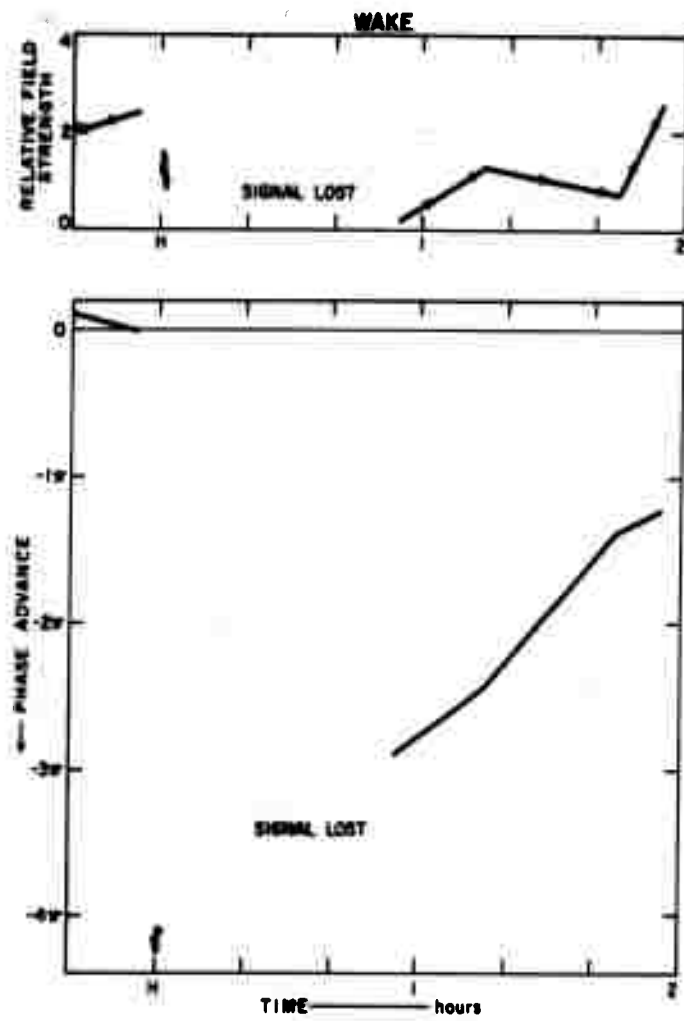


Figure 5.7 Amplitude and phase detail at Wake, King Fish.

CHAPTER 6

DISCUSSION OF RESULTS

The results presented in this report define measurements made on the received amplitude and phase of the 18-kc transmissions from NBA, Canal Zone. Since these data were recorded for another purpose, the paths that resulted were not optimum for defining nuclear-event effects on VLF propagation. Therefore, the results presented here are limited to a description of the data and do not include an interpretation of the observed effects in terms of event parameters or ionospheric effects.

Five high-altitude events occurred during the Fish Bowl series. One of these events, Star Fish, occurred during July 1962, and the other four events occurred within a 16-day period beginning in October (Table 1.1). This latter grouping to some extent influenced the observed VLF effects. For Star Fish, all sites showed an immediate signal attenuation followed by a recovery to normal level within 4 minutes in many instances. Phase at all sites¹ was advanced by the event, the advance being apparently instantaneous at all sites

¹The sites can be grouped into northern (Roi-Namur, Wake, Midway, Kauai, and South Point), southern or conjugate (Viti Levu, Tutuila, and Rarotonga), and remote (Okinawa, Fairbanks, and Palo Alto). Canton is unique in that it is at the magnetic equator between the northern and conjugate areas.

except Canton and Palo Alto. There is evidence of delayed phase advances (possibly two stages) in the conjugate area and to the east of the immediate event area, within 3 minutes of the Star Fish event. Some sites responded only to the later phase advances (Canton, for example).

All sites observed a disturbance associated with the Check Mate event, except possibly Fairbanks. Amplitude variations were small with both signal increases and decreases being recorded. Signal recovery to normal was rapid after the event. Phase variations at the northern-area sites showed phase advances returning to normal in 1 or 2 hours. The remote-area sites and Canton also showed phase advances that persisted for several hours. The conjugate area, however, showed phase retardations reaching a maximum in 20 minutes and returning to normal in about 1 hour. This phase retardation was not expected, and all known data-processing techniques and interpretations that could result in a phase advance were tried to no avail.

The Blue Gill event occurred within 6 days of the Check Mate event. Amplitude of the received NBA signal showed an attenuation at all sites except Canton (Fairbanks and Rarotonga did not obtain records), followed immediately by an enhancement. At some sites, this enhancement resulted in signal amplitudes above normal. At Palo Alto a second attenuation was observed at 15 minutes after

the event. At all sites, the phase of the received NBA signal showed an advance at event time, with recovery at the northern-area sites within 2 hours, and recovery at the conjugate-area sites in some 4 hours.

Blue Gill showed two distinct affected areas. In the northern area, most sites observed the King Fish event as a phase advance, while Midway showed no effect. Canton did not show any effect, giving evidence of a limited disturbed area around the event. In the conjugate area, Viti Levu and Tutuila observed a phase advance (no effect was observed at Rarotonga) giving evidence of a well-defined conjugate area. The remote paths showed no significant effect from King Fish.

Tight Rope gave no evidence of a disturbance on any of the NBA paths that were monitored.

The results presented here were obtained by a system designed and installed primarily as a device to control the frequency of a local standard. These results demonstrate that diligent use of all available systems during a nuclear-test series can result in additional useful data.

TABLE A.1 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|--|---------|--|-----|-----------|--------------|-----------------|
| 2100 | 201 | | | | | | | 093 | 000 | .000 | .000 |
| 2120 | 195 | | | | | | | 104 | 000 | .000 | .000 |
| 2140 | 179 | | | | | | | 092 | 000 | .000 | .000 |
| 2200 | 190 | | | | | | | 090 | 000 | .000 | .000 |
| 2220 | 205 | | | 151-147 | | | | 073 | .114 | .000 | .000 |
| 2240 | 188 | | | 150-146 | | | | 068 | .033 | .000 | .000 |
| 2300 | 222 | | | 147-144 | | | | 074 | .034 | .000 | .000 |
| 2320 | 215 | | | | | | | 070 | .021 | .000 | .000 |
| 2340 | 219 | | | | | | | 085 | 000 | .007 | .000 |
| 0000 | | | | | | | | | | .000 | .000 |
| 0020 | | | | | | | | | | .000 | .000 |
| 0040 | | | | | | | | | | .000 | .000 |
| 0100 | 219 | | | | | | | 086 | 000 | .000 | .000 |
| 0120 | 213 | | | | | | | 086 | .047 | .000 | .000 |
| 0140 | 224 | | | 153-147 | | | | 085 | 000 | .000 | .000 |
| 0200 | 220 | | | | | | | 077 | 000 | .032 | .063 |
| 0220 | 232 | | | | | | | 072 | 000 | .000 | .000 |
| 0240 | 241 | | | | | | | 062 | 000 | .004 | .000 |
| 0300 | 262 | | | | | | | 078 | 000 | .000 | .000 |
| 0320 | 280 | | | | | | | 072 | 000 | .000 | .000 |
| 0340 | 313 | | | | | | | 081 | 000 | .015 | .000 |
| 0400 | 342 | | | | | | | 084 | 000 | .091 | .013 |
| 0420 | 354 | | | | | | | 040 | 000 | .042 | .078 |
| 0440 | 379 | | | | | | | 046 | 000 | .087 | .000 |
| 0500 | 356 | | | | | | | 102 | .169 | .034 | .000 |
| 0520 | 310 | | | | | 311-274 | | 092 | 000 | .007 | .014 |
| 0540 | 292 | | | | | | | 092 | 000 | .000 | .000 |
| 0600 | 281 | | | | | | | 079 | 000 | .023 | .000 |
| 0620 | 270 | | | | | | | 062 | 000 | .027 | .022 |
| 0640 | 305 | | | | | | | 053 | .028 | .052 | .000 |
| 0700 | 309 | | | | | | | 041 | .026 | .104 | .000 |
| 0720 | 267 | | | | | | | 041 | 000 | .163 | .000 |
| 0740 | 276 | | | | | | | 042 | .026 | .122 | .114 |
| 0800 | 278 | | | | | | | 042 | .030 | .057 | .133 |
| 0820 | 283 | | | | | | | 041 | .107 | .072 | .072 |
| 0840 | 224 | | | 193-174 | | | | 041 | 000 | .000 | .000 |

TABLE A.2 ROI-NAMUR TO KAUAI, STAR FISH

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0900 | 199 | | | | | | | 041 | 000 | .000 | .000 |
| 0920 | 175 | | | | | | | 041 | .179 | .000 | .000 |
| 0940 | 126 | | | | | | | 040 | 000 | .000 | .000 |
| 1000 | 109 | | | | | | | 047 | .113 | .000 | .000 |
| 1020 | 141 | | | | | | | 045 | .292 | .000 | .000 |
| 1040 | 141 | | | | | | | 045 | .313 | .000 | .000 |
| 1100 | 147 | | | | | | | 045 | .059 | .000 | .000 |
| 1120 | 258 | | | | | | | 045 | 000 | .000 | .000 |
| 1140 | 265 | | | | | | | 045 | 000 | .000 | .000 |
| 1200 | 311 | | | | | | | 040 | 000 | .000 | .000 |
| 1220 | 289 | | | | | | | 045 | 000 | .000 | .000 |
| 1240 | 307 | | | | | | | 048 | 000 | .000 | .000 |
| 1300 | 315 | | | | | | | 041 | 000 | .000 | .000 |
| 1320 | 303 | | | | | | | 041 | 000 | .056 | .111 |
| 1340 | 282 | | | | | | | 048 | 000 | .016 | .047 |
| 1400 | 264 | | | | | | | 040 | 000 | .000 | .000 |
| 1420 | 269 | | | | | | | 040 | 000 | .000 | .000 |
| 1440 | 257 | | | | | | | 041 | 000 | .000 | .000 |
| 1500 | 277 | | | | | | | 042 | 000 | .000 | .000 |
| 1520 | 269 | | | | | | | 040 | 000 | .000 | .000 |
| 1540 | | | | | | | | 047 | 000 | .000 | .000 |
| 1600 | 243 | | | | | | | 040 | 000 | .000 | .000 |
| 1620 | 271 | | | | | | | 042 | 000 | .000 | .000 |
| 1640 | | | | | | | | | | | |
| 1700 | 213 | | | | | | | 067 | .288 | .013 | .039 |
| 1720 | 197 | | | | | | | 087 | .436 | .058 | .174 |
| 1740 | 226 | | | | | | | 107 | .462 | .000 | .000 |
| 1800 | | | | | | | | | | | |
| 1820 | 184 | | | | | | | | | | |
| 1840 | 224 | | | | | | | 085 | 000 | .000 | .000 |
| 1900 | 199 | | | | | | | 084 | 000 | .000 | .000 |
| 1920 | 201 | | | | | | | 118 | 000 | .000 | .000 |
| 1940 | 215 | | | | | | | 090 | 000 | .000 | .000 |
| 2000 | 210 | | | | | | | 067 | .122 | .000 | .025 |
| 2020 | 210 | | | | | | | 093 | 000 | .000 | .000 |
| 2040 | 206 | | | | | | | 129 | 000 | .000 | .000 |

0900 GMT 9 JULY

079-055

101-094
115-087
123-093
099-093

145-100

164-116
173-118

123-105

TABLE A.2 CONTINUED

| TIME | MOF | GAPS IN MF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 2100 | 202 | | | | | | | | 116 | 000 | .000 | .000 |
| 2120 | 194 | | | | | | | | 097 | 000 | .000 | .000 |
| 2140 | 197 | | | | | | | | 100 | 000 | .000 | .000 |
| 2200 | 201 | | | | | | | | 090 | 000 | .007 | .022 |
| 2220 | 190 | | | | | | | | 097 | 000 | .000 | .000 |
| 2300 | 219 | | | | | | | | 105 | 000 | .000 | .000 |
| 2320 | 222 | | | | | | | | 103 | .252 | .000 | .000 |
| 2340 | 225 | | | | | | | | 095 | .004 | .004 | .009 |
| 0000 | 235 | | | | | | | | 105 | .006 | .006 | .018 |
| 0020 | 214 | | | | | | | | 099 | 000 | .000 | .000 |
| 0040 | 218 | | | | | | | | 106 | 000 | .000 | .000 |
| 0100 | 226 | | | | | | | | 095 | .016 | .016 | .000 |
| 0120 | 204 | | | | | | | | 093 | 000 | .000 | .000 |
| 0140 | 207 | | | | | | | | 099 | 000 | .000 | .000 |
| 0200 | 249 | | | | | | | | 105 | 000 | .000 | .000 |
| 0220 | 226 | | | | | | | | 074 | 000 | .000 | .000 |
| 0240 | 235 | | | | | | | | 073 | .004 | .004 | .000 |
| 0300 | 245 | | | | | | | | 097 | 000 | .000 | .000 |
| 0320 | 251 | | | | | | | | 090 | 000 | .000 | .000 |
| 0340 | 274 | | | | | | | | 087 | 000 | .000 | .000 |
| 0400 | 294 | | | | | | | | 106 | 000 | .000 | .000 |
| 0420 | 388 | | | | | | | | 107 | 000 | .000 | .000 |
| 0440 | 319 | | | | | | | | 089 | 000 | .000 | .000 |
| 0500 | 313 | | | | | | | | 080 | 000 | .000 | .000 |
| 0520 | 285 | | | | | | | | 095 | 000 | .019 | .000 |
| 0540 | 296 | | | | | | | | 061 | 000 | .000 | .000 |
| 0600 | 279 | | | | | | | | 049 | 000 | .000 | .000 |
| 0620 | 274 | | | | | | | | 055 | 000 | .000 | .000 |
| 0640 | 258 | | | | | | | | 042 | 000 | .000 | .000 |
| 0700 | 267 | | | | | | | | 042 | 000 | .000 | .000 |
| 0720 | 251 | | | | | | | | 042 | 000 | .000 | .000 |
| 0740 | 256 | | | | | | | | 042 | 000 | .000 | .000 |
| 0800 | 287 | | | | | | | | 042 | 000 | .000 | .000 |
| 0820 | 276 | | | | | | | | 042 | 000 | .000 | .000 |
| 0840 | | | | | | | | | | | | |

TABLE A.3 CANTON TO FAIRBANKS, STAR FISH

0900 GMT 9 JULY

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0900 | 195 | | | | | | | | 040 | 000 | .000 | .000 |
| 0920 | 116 | | | | | | | | 051 | 000 | .000 | .000 |
| 0940 | 040 | | | | | | | | 040 | B | .000 | .000 |
| 1000 | | | | | | | | | | | | |
| 1020 | 040 | | | | | | | | 040 | B | .000 | .000 |
| 1040 | | | | | | | | | | | | |
| 1100 | | | | | | | | | | | | |
| 1120 | | | | | | | | | | | | |
| 1140 | | | | | | | | | | | | |
| 1200 | | | | | | | | | | | | |
| 1220 | | | | | | | | | | | | |
| 1240 | | | | | | | | | | | | |
| 1300 | | | | | | | | | | | | |
| 1320 | | | | | | | | | | | | |
| 1340 | | | | | | | | | | | | |
| 1400 | | | | | | | | | | | | |
| 1420 | 040 | | | | | | | | 040 | B | .000 | .000 |
| 1440 | | | | | | | | | | | | |
| 1500 | | | | | | | | | | | | |
| 1520 | | | | | | | | | | | | |
| 1540 | | | | | | | | | | | | |
| 1600 | 149 | | | | | | | | 056 | 000 | .000 | .000 |
| 1620 | 069 | | | | | | | | 056 | 000 | .000 | .000 |
| 1640 | 128 | | | | | | | | 084 | 000 | .000 | .000 |
| 1700 | | | | | | | | | | | | |
| 1720 | 040 | | | | | | | | 040 | B | .000 | .000 |
| 1740 | 161 | | | | | | | | 085 | 000 | .000 | .000 |
| 1800 | 156 | | | | | | | | 080 | 000 | .000 | .000 |
| 1820 | 192 | | | | | | | | 082 | 000 | .000 | .000 |
| 1840 | 183 | | | | | | | | 094 | 000 | .000 | .000 |
| 1900 | | | | | | | | | | | | |
| 1920 | 187 | | | | | | | | 116 | 000 | .000 | .000 |
| 1940 | 181 | | | | | | | | 122 | 000 | .000 | .000 |
| 2000 | 192 | | | | | | | | 122 | 000 | .000 | .000 |
| 2020 | 187 | | | | | | | | 117 | 000 | .000 | .000 |
| 2040 | 186 | | | | | | | | 122 | 000 | .000 | .000 |
| 2040 | 192 | | | | | | | | 115 | 000 | .000 | .000 |

TABLE A.3 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 2100 | 200 | | | | | | | | 116 | 000 | .000 | .000 |
| 2120 | 211 | | | | | | | | 115 | 000 | .000 | .000 |
| 2140 | 214 | | | | | | | | 116 | 000 | .000 | .000 |
| 2200 | 221 | | | | | | | | 150 | 000 | .000 | .000 |
| 2220 | 201 | | | | | | | | 150 | 000 | .000 | .000 |
| 2240 | 183 | | | | | | | | 139 | 000 | .000 | .000 |
| 2300 | | | | | | | | | | | | |
| 2320 | | | | | | | | | | | | |
| 2340 | | | | | | | | | | | | |
| 0000 | | | | | | | | | | | | |
| 0020 | | | | | | | | | | | | |
| 0040 | | | | | | | | | | | | |
| 0100 | 169 | | | | | | | | 115 | 000 | .000 | .000 |
| 0120 | | | | | | | | | | | | |
| 0140 | | | | | | | | | | | | |
| 0200 | | | | | | | | | | | | |
| 0220 | | | | | | | | | | | | |
| 0240 | 211 | | | | | | | | | | | |
| 0300 | 200 | | | | | | | | 134 | 000 | .000 | .000 |
| 0320 | 186 | | | | | | | | 125 | 000 | .000 | .000 |
| 0340 | 170 | | | | | | | | 132 | 000 | .000 | .000 |
| 0400 | 174 | | | | | | | | 163 | 000 | .000 | .000 |
| 0420 | | | | | | | | | 144 | 000 | .000 | .000 |
| 0440 | | | | | | | | | 116 | 000 | .000 | .000 |
| 0500 | 135 | | | | | | | | | | | |
| 0520 | 153 | | | | | | | | 113 | 000 | .000 | .000 |
| 0540 | | | | | | | | | 109 | 000 | .000 | .000 |
| 0600 | | | | | | | | | | | | |
| 0620 | 184 | | | | | | | | | | | |
| 0640 | 191 | | | | | | | | 055 | 000 | .000 | .000 |
| 0700 | 198 | | | | | | | | 049 | 000 | .000 | .000 |
| 0720 | 192 | | | | | | | | 040 | 000 | .000 | .000 |
| 0740 | 200 | | | | | | | | 041 | 000 | .000 | .000 |
| 0800 | 196 | | | | | | | | 041 | 000 | .000 | .000 |
| 0820 | 197 | | | | | | | | 040 | 000 | .000 | .000 |
| 0840 | | | | | | | | | 040 | 000 | .000 | .000 |

TABLE A.4 CANTON TO MIDWAY, STAR FISH

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | WKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|---------|--|--|--|--|-----|-----------|--------------|-----------------|
| 0900 | 040 | | | | | | | | 040 | B | .107 | .000 |
| 0920 | 221 | | | 199-105 | | | | | 052 | .556 | .033 | .000 |
| 0940 | 182 | 152-146 | 129-121 | 107-070 | | | | | 065 | .436 | .000 | .000 |
| 1000 | 040 | | | | | | | | 040 | B | .025 | .000 |
| 1020 | 040 | | | | | | | | 040 | B | .068 | .000 |
| 1040 | 171 | | | | | | | | 063 | .509 | .024 | .000 |
| 1100 | 160 | 155-148 | 135-128 | | | | | | 118 | .333 | .000 | .000 |
| 1120 | 040 | | | | | | | | 040 | B | .000 | .000 |
| 1140 | 040 | | | | | | | | 040 | B | .000 | .000 |
| 1200 | | | | | | | | | | | .000 | .000 |
| 1240 | | | | | | | | | | | .000 | .000 |
| 1300 | 127 | | | | | | | | 064 | .556 | .000 | .000 |
| 1320 | 137 | 121-117 | 130-117 | 110-098 | | | | | 054 | .687 | .000 | .000 |
| 1340 | 110 | | | 099-094 | | | | | 062 | .417 | .135 | .000 |
| 1400 | | | | | | | | | | | .000 | .000 |
| 1420 | 155 | | | | | | | | | | .000 | .000 |
| 1440 | 182 | | | 105-097 | | | | | 054 | .168 | .089 | .000 |
| 1500 | 190 | 153-140 | 129-115 | 107-087 | | | | | 057 | .400 | .138 | .000 |
| 1520 | 227 | | | 090-070 | | | | | 057 | .150 | .066 | .000 |
| 1540 | 172 | | | 089-079 | | | | | 055 | .081 | .171 | .000 |
| 1600 | 185 | 156-151 | 127-116 | 105-099 | | | | | 054 | .331 | .136 | .000 |
| 1620 | 122 | | | 106-099 | | | | | 041 | .306 | .171 | .055 |
| 1640 | 158 | | | | | | | | 040 | .000 | .108 | .000 |
| 1700 | 115 | | | | | | | | 040 | .000 | .180 | .000 |
| 1720 | | | | | | | | | 041 | .068 | .080 | .000 |
| 1740 | 151 | | | | | | | | | | .067 | .067 |
| 1800 | 179 | | | 081-079 | | | | | 048 | .039 | .026 | .000 |
| 1820 | 178 | 121-115 | | 081-079 | | | | | 058 | .066 | .000 | .000 |
| 1840 | 177 | | | 081-079 | | | | | 067 | .018 | .000 | .000 |
| 1900 | 174 | | | | | | | | 072 | .000 | .000 | .000 |
| 1920 | 040 | | | 110-106 | | | | | 090 | .048 | .000 | .000 |
| 1940 | 040 | | | | | | | | 040 | B | .000 | .000 |
| 2000 | 184 | 161-154 | 148-139 | | | | | | 040 | B | .008 | .000 |
| 2020 | 183 | | | | | | | | 094 | .178 | .000 | .000 |
| 2040 | 188 | 154-137 | | | | | | | 110 | .000 | .008 | .024 |
| | | | | | | | | | 110 | .218 | .000 | .000 |

0900 GBT 9 JULY

TABLE A.4 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|---------|--|--|-----|------|-----------|--------------|-----------------|
| 2100 | 184 | 141-136 | 128-120 | | | | 101 | .060 | .000 | .000 | |
| 2120 | 183 | 156-146 | 140-131 | | | | 110 | .110 | .000 | .000 | |
| 2140 | 185 | | | | | | 125 | .317 | .000 | .000 | |
| 2200 | 191 | 146-140 | | | | | 106 | .000 | .000 | .000 | |
| 2220 | 173 | 140-136 | | | | | 138 | .171 | .000 | .000 | |
| 2240 | 159 | | | | | | 087 | .056 | .000 | .000 | |
| 2300 | | | | | | | | | .000 | .000 | |
| 2320 | 160 | | | | | | 083 | .000 | .000 | .000 | |
| 2340 | 159 | | | | | | 085 | .000 | .000 | .000 | |
| 0000 | 175 | | | | | | 131 | .000 | .017 | .000 | |
| 0020 | 183 | | | | | | 106 | .000 | .000 | .000 | |
| 0040 | 183 | | | | | | 078 | .057 | .000 | .000 | |
| 0100 | 204 | 161-143 | 115-112 | 108-105 | | | 067 | .131 | .078 | .000 | |
| 0120 | 230 | 157-152 | | | | | 122 | .046 | .000 | .000 | |
| 0140 | 247 | 135-130 | | | | | 112 | .041 | .000 | .000 | |
| 0200 | 253 | | | | | | 108 | .037 | .000 | .123 | |
| 0220 | 253 | | | | | | 113 | .000 | .000 | .000 | |
| 0240 | 304 | | | | | | 117 | .083 | .249 | .000 | |
| 0300 | 315 | | | | | | 104 | .055 | .165 | .000 | |
| 0320 | 373 | 279-228 | | | | | 119 | .115 | .115 | .230 | |
| 0340 | 384 | 251-225 | | | | | 111 | .201 | .167 | .167 | |
| 0400 | 334 | 302-231 | | | | | 084 | .095 | .094 | .094 | |
| 0420 | 306 | | | | | | 090 | .284 | .000 | .000 | |
| 0440 | 312 | | | | | | 085 | .000 | .000 | .000 | |
| 0500 | 296 | 243-226 | | | | | 077 | .000 | .000 | .000 | |
| 0520 | 260 | 217-201 | | | | | 090 | .100 | .081 | .000 | |
| 0540 | 267 | | | | | | 077 | .084 | .057 | .000 | |
| 0600 | 282 | | | | | | 056 | .000 | .061 | .000 | |
| 0620 | | | | | | | | | .000 | .000 | |
| 0640 | 248 | | | | | | 057 | .000 | .000 | .000 | |
| 0700 | 236 | | | | | | 040 | .000 | .000 | .000 | |
| 0720 | | | | | | | | | .000 | .000 | |
| 0740 | | | | | | | | | .000 | .000 | |
| 0800 | 274 | | | | | | 040 | .000 | .080 | .000 | |
| 0820 | 257 | | | | | | 040 | .000 | .000 | .000 | |
| 0840 | 253 | | | | | | 040 | .000 | .305 | .000 | |

TABLE A.5 KAUAI TO WAKE, STAR FISH

0900 ONE 9 JULY

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | EMGD AVERAGE | SINGLE BIRD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0900 | | | | | | | | | | | |
| 0920 | 131 | | | | | | | 042 | .573 | .369 | |
| 0940 | 076 | | | | | | | 042 | .000 | .256 | |
| 1000 | 086 | | | | | | | 040 | .000 | .162 | |
| 1020 | 109 | | | | | | | 040 | .000 | .084 | |
| 1040 | 079 | | | | | | | 040 | .101 | .163 | |
| 1100 | 083 | | | | | | | 044 | .000 | .087 | |
| 1120 | 079 | | | | | | | 044 | .000 | .175 | |
| 1140 | 080 | | | | | | | 051 | .000 | .257 | |
| 1200 | | | | | | | | 045 | .086 | .148 | |
| 1220 | | | | | | | | | | .132 | |
| 1240 | 154 | | | | | | | | | .324 | |
| 1300 | 116 | | | | | | | 085 | .116 | .100 | |
| 1320 | 121 | | | | | | | 065 | .000 | .000 | |
| 1340 | 113 | | | | | | | 047 | .000 | .057 | |
| 1400 | 189 | | | | | | | 062 | .149 | .122 | |
| 1420 | 097 | | | | | | | 086 | .000 | .000 | |
| 1440 | 168 | | | | | | | 065 | .000 | .000 | |
| 1500 | 249 | | | | | | | 047 | .058 | .117 | |
| 1520 | 179 | | | | | | | 041 | .197 | .000 | |
| 1540 | 179 | | | | | | | 040 | .000 | .041 | |
| 1600 | 149 | | | | | | | 040 | .000 | .068 | |
| 1620 | 173 | | | | | | | 047 | .294 | .000 | |
| 1640 | 040 | | | | | | | 054 | .227 | .000 | |
| 1700 | 040 | | | | | | | 040 | B | .000 | |
| 1720 | | | | | | | | 040 | B | .059 | |
| 1740 | | | | | | | | 040 | .000 | .000 | |
| 1800 | 172 | | | | | | | | .000 | .000 | |
| 1820 | 126 | | | | | | | | .000 | .000 | |
| 1840 | | | | | | | | | .000 | .000 | |
| 1900 | | | | | | | | 109 | .000 | .000 | |
| 1920 | | | | | | | | 119 | .000 | .000 | |
| 1940 | | | | | | | | | .072 | .144 | |
| 2000 | | | | | | | | | .000 | .000 | |
| 2020 | | | | | | | | | .000 | .045 | |
| 2040 | | | | | | | | | .000 | .069 | |
| | | | | | | | | | .000 | .147 | |
| | | | | | | | | | .000 | .090 | |
| | | | | | | | | | .000 | .236 | |
| | | | | | | | | | .000 | .000 | |

TABLE A.5 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|---------|--|---------|--|-----|-----------|--------------|-----------------|
| 2100 | | | | | | | | | | | .279 | |
| 2120 | | | | | | | | | | | .000 | |
| 2140 | | | | | | | | | | | .000 | |
| 2200 | | | | | | | | | | | .368 | |
| 2220 | | | | | | | | | | | .483 | |
| 2240 | | | | | | | | | | | .335 | |
| 2300 | | | | | | | | | | | .342 | |
| 2320 | | | | | | | | | | | .291 | |
| 2340 | | | | | | | | | | | .115 | |
| 0000 | | | | | | | | | | | .247 | |
| 0020 | | | | | | | | | | | .000 | |
| 0040 | | | | | | | | | | | .000 | |
| 0100 | | | | | | | | | | | .000 | |
| 0120 | | | | | | | | | | | .000 | |
| 0140 | | | | | | | | | | | .000 | |
| 0200 | 183 | | | 176-164 | | | | | 118 | .185 | .064 | |
| 0220 | 203 | | | 177-131 | | | | | 100 | .583 | .065 | |
| 0240 | 202 | | | 194-165 | 138-130 | | | | 124 | .474 | .095 | |
| 0300 | 138 | | | | 123-115 | | | | 102 | .333 | .000 | |
| 0320 | 230 | | | | | | | | | | .000 | |
| 0340 | 265 | | | 191-168 | 135-131 | | | | 122 | .250 | .052 | |
| 0400 | 291 | | | 179-156 | | | | | 124 | .440 | .037 | |
| 0420 | 309 | | | 244-198 | 182-167 | | | | 112 | .453 | .053 | |
| 0440 | 322 | | | 176-167 | 119-115 | | | | 097 | .344 | .000 | |
| 0500 | 341 | | | | | | | | 104 | .321 | .000 | |
| 0520 | 342 | | | | | | | | 097 | .078 | .000 | |
| 0540 | 338 | | | 244-205 | | | | | 085 | .043 | .000 | |
| 0600 | 321 | | | 279-263 | | | | | 083 | .129 | .000 | |
| 0620 | 322 | | | 254-193 | | | | | 092 | .336 | .080 | |
| 0640 | 311 | | | 284-218 | | | | | 074 | .214 | .000 | |
| 0700 | 306 | | | 252-237 | | | | | 069 | .000 | .000 | |
| 0720 | | | | 290-282 | 121-117 | | 096-092 | | | .092 | .067 | |
| 0740 | | | | 223-197 | | | | | | .077 | .000 | |
| 0800 | | | | 170-153 | | | | | | .065 | .000 | |
| 0820 | | | | | | | | | | .189 | .000 | |
| 0840 | | | | | | | | | | .122 | .000 | |
| | | | | | | | | | | .000 | .000 | |
| | | | | | | | | | | .067 | .000 | |
| | | | | | | | | | | .103 | .000 | |
| | 204 | | | | | | | | 041 | .000 | .115 | |
| | 228 | | | | | | | | 041 | .000 | .087 | |

TABLE A.6 KAUAI TO MIDWAY, STAR FISH

0900 GMT 9 JULY

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|--|--|--|---------|-----|-----------|--------------|-----------------|
| 0900 | 040 | | | | | | | 040 | 000 | .046 | .000 |
| 0920 | 133 | | | | | | | 124 | 000 | .109 | .000 |
| 0940 | 175 | | | | | | | 055 | .733 | .033 | .000 |
| 1000 | 157 | | | | | | 151-063 | 055 | .239 | .077 | .000 |
| 1020 | 160 | | | | | | 123-068 | 051 | .495 | .050 | .000 |
| 1040 | 185 | | | | | | | 131 | 000 | .000 | .000 |
| 1100 | 173 | | | | | | | 124 | .102 | .045 | .089 |
| 1120 | 180 | | 151-146 | | | | | 124 | 000 | .026 | .000 |
| 1200 | 163 | | | | | | | 104 | .153 | .044 | .000 |
| 1220 | 159 | | | | | | | 100 | 000 | .000 | .000 |
| 1240 | 159 | | | | | | | 100 | .051 | .022 | .000 |
| 1300 | 149 | | | | | | | 050 | .283 | .000 | .000 |
| 1320 | 152 | | | | | | 088-062 | 051 | .149 | .034 | .000 |
| 1340 | 147 | | | | | | 098-091 | 052 | .263 | .000 | .000 |
| 1400 | 147 | | | | | | 100-092 | | | .000 | .000 |
| 1420 | 159 | | | | | | | 051 | .065 | .000 | .000 |
| 1440 | | | | | | | | | | .000 | .000 |
| 1500 | | | | | | | | | | .000 | .000 |
| 1520 | 152 | | | | | | | 053 | .263 | .031 | .000 |
| 1540 | 134 | | 144-135 | | | | | 053 | .235 | .076 | .159 |
| 1600 | 131 | | | | | | | 041 | .333 | .000 | .000 |
| 1620 | 068 | | | | | | | 051 | .176 | .000 | .000 |
| 1640 | 040 | | | | | | 060-057 | 040 | | .000 | .000 |
| 1700 | | | | | | | | | | .000 | .000 |
| 1720 | | | | | | | | | | .000 | .000 |
| 1740 | 141 | | | | | | | 053 | 000 | .000 | .000 |
| 1800 | 160 | | | | | | | 053 | 000 | .000 | .000 |
| 1820 | 159 | | | | | | | 051 | .093 | .000 | .000 |
| 1840 | 192 | | 143-139 | | | | | 054 | 000 | .000 | .000 |
| 1900 | 187 | | | | | | | 055 | .197 | .000 | .000 |
| 1920 | 187 | | 171-156 | | | | | 053 | 000 | .000 | .000 |
| 1940 | 176 | | | | | | | 054 | 000 | .000 | .000 |
| 2000 | 185 | | | | | | | 070 | 000 | .000 | .000 |
| 2020 | 185 | | | | | | | 051 | 000 | .000 | .000 |
| 2040 | 186 | | 169-161 | | | | 066-064 | 057 | .078 | .011 | .033 |

TABLE A.6 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|-------------------------------|--|--|--|--------------------|--|-----|-----------|--------------|-----------------|
| 2100 | 183 | | | | | | | 052 | .015 | .000 | .000 |
| 2120 | | | | | | | | | | .000 | .000 |
| 2140 | 040 | | | | | | | 040 | B | .000 | .039 |
| 2200 | 169 | 169-160 | | | | | | 155 | 000 | .000 | .000 |
| 2240 | 179 | | | | | | | 152 | .333 | .000 | .000 |
| 2300 | | | | | | | | | | .000 | .000 |
| 2320 | 159 | | | | | | | 125 | 000 | .000 | .000 |
| 2340 | 181 | 142-135 | | | | | | 132 | .143 | .000 | .000 |
| 0000 | 180 | | | | | | | 097 | .398 | .000 | .000 |
| 0020 | 174 | | | | | | | 137 | 000 | .000 | .000 |
| 0040 | 040 | | | | | | | 040 | B | .014 | .042 |
| 0100 | 155 | | | | | | | 137 | 000 | .017 | .051 |
| 0120 | 160 | | | | | | | 147 | 000 | .011 | .032 |
| 0140 | 164 | | | | | | | 140 | 000 | .063 | .188 |
| 0200 | 146 | | | | | | | 131 | 000 | .171 | .514 |
| 0220 | 193 | | | | | | | 131 | 000 | .120 | .326 |
| 0240 | 214 | | | | | | | 078 | .048 | .105 | .314 |
| 0300 | 219 | | | | | | | 079 | .029 | .026 | .042 |
| 0320 | 237 | | | | | | | 120 | 000 | .093 | .279 |
| 0340 | 238 | | | | | | | 122 | 000 | .129 | .258 |
| 0400 | 241 | | | | | | | 078 | .138 | .161 | .135 |
| 0420 | 234 | 139-136 137-133 137-132 | | | | 117-107 | | 086 | 000 | .191 | .265 |
| 0440 | 236 | | | | | | | 077 | .107 | .000 | .000 |
| 0500 | 221 | | | | | | | 074 | .132 | .000 | .000 |
| 0520 | 220 | 233-217 | | | | | | 073 | .163 | .009 | .000 |
| 0540 | 196 | | | | | | | 065 | .000 | .027 | .000 |
| 0600 | 197 | | | | | | | 059 | .176 | .000 | .000 |
| 0620 | | | | | | | | | 000 | .000 | .000 |
| 0640 | 160 | | | | | | | 040 | .092 | .017 | .026 |
| 0700 | 160 | | | | | | | 040 | 000 | .022 | .000 |
| 0720 | | | | | | | | | | .000 | .039 |
| 0740 | | | | | | | | | | .000 | .000 |
| 0800 | 159 | | | | | | | 040 | .118 | .051 | .000 |
| 0820 | 142 | | | | | | | 040 | .059 | .203 | .000 |
| 0840 | 157 | 141-135 | | | | 103-095 095-089 | | 040 | 000 | .000 | .000 |

TABLE A.7 CANTON TO HAWAII, STAR FISH

0900 OCT 9 JULY

| TIME | MOF | GAPS IN HF SPECTRUM | | | | LOF | EVENT DAY | MGD AVERAGE | SINGLE MGD DAY |
|------|-----|---------------------|--|--|--|-----|-----------|-------------|----------------|
| 0900 | 190 | | | | | 040 | 000 | .034 | .068 |
| 0920 | 480 | | | | | 040 | .011 | .011 | .000 |
| 0940 | 524 | | | | | 039 | .012 | .060 | .082 |
| 1000 | 478 | | | | | 040 | 000 | .000 | .000 |
| 1020 | | | | | | | | | |
| 1040 | 304 | | | | | 043 | .092 | .051 | .000 |
| 1100 | 318 | | | | | 043 | .040 | .011 | .154 |
| 1120 | 349 | | | | | 044 | .020 | .000 | .033 |
| 1140 | 300 | | | | | 045 | 000 | .000 | .000 |
| 1200 | 315 | | | | | 045 | 000 | .000 | .000 |
| 1220 | 284 | | | | | 043 | .037 | .011 | .022 |
| 1240 | 290 | | | | | 042 | 000 | .000 | .000 |
| 1300 | 317 | | | | | 042 | 000 | .120 | .000 |
| 1320 | 319 | | | | | 042 | 000 | .000 | .000 |
| 1340 | 316 | | | | | 042 | 000 | .000 | .000 |
| 1400 | | | | | | | | .000 | .000 |
| 1420 | 293 | | | | | 041 | 000 | .230 | .000 |
| 1440 | 301 | | | | | 042 | 000 | .008 | .000 |
| 1500 | 301 | | | | | 042 | 000 | .000 | .000 |
| 1520 | 288 | | | | | 041 | .012 | .000 | .000 |
| 1540 | 272 | | | | | 041 | 000 | .037 | .000 |
| 1600 | 263 | | | | | 042 | 000 | .026 | .000 |
| 1620 | 258 | | | | | 042 | 000 | .000 | .070 |
| 1640 | 219 | | | | | 041 | 000 | .000 | .000 |
| 1700 | 198 | | | | | 041 | 000 | .028 | .030 |
| 1720 | 213 | | | | | 040 | 000 | .037 | .042 |
| 1740 | | | | | | 040 | 000 | .000 | .000 |
| 1800 | 178 | | | | | 059 | 000 | .019 | .000 |
| 1820 | 176 | | | | | 067 | 000 | .012 | .000 |
| 1840 | 175 | | | | | 066 | .083 | .000 | .000 |
| 1900 | 181 | | | | | 070 | 000 | .000 | .000 |
| 1920 | 185 | | | | | 067 | 000 | .000 | .000 |
| 1940 | 189 | | | | | 071 | 000 | .047 | .093 |
| 2000 | 196 | | | | | 066 | .023 | .000 | .000 |
| 2020 | 223 | | | | | 065 | 000 | .000 | .000 |
| 2040 | 224 | | | | | 072 | 000 | .016 | .093 |

TABLE A.7 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 2100 | 236 | | | | | | | 075 | 000 | .008 | .000 |
| 2120 | 224 | | | | | | | 070 | 000 | .000 | .000 |
| 2140 | 222 | | | | | | | 076 | 000 | .000 | .000 |
| 2200 | 206 | | | | | | | 084 | 000 | .000 | .000 |
| 2220 | 220 | | | | | | | 087 | 000 | .000 | .000 |
| 2240 | 233 | | | | | | | 072 | 000 | .000 | .000 |
| 2300 | 215 | | | | | | | 073 | 000 | .000 | .000 |
| 2320 | 216 | | | | | | | 084 | 000 | .000 | .000 |
| 2340 | | | | | | | | | | | |
| 0000 | 221 | | | | | | | 058 | 000 | .000 | .000 |
| 0020 | | | | | | | | | | | |
| 0040 | | | | | | | | | | | |
| 0100 | 230 | | | | | | | 060 | 000 | .000 | .000 |
| 0120 | 222 | | | | | | | 060 | 000 | .000 | .000 |
| 0140 | 215 | | | | | | | 070 | 000 | .009 | .000 |
| 0200 | 204 | | | | | | | 067 | 000 | .000 | .000 |
| 0220 | 216 | | | | | | | 062 | 000 | .000 | .000 |
| 0240 | 229 | | | | | | | 063 | 000 | .005 | .010 |
| 0300 | 250 | | | | | | | 054 | 000 | .000 | .000 |
| 0320 | 276 | | | | | | | 053 | 000 | .000 | .000 |
| 0340 | | | | | | | | | | | |
| 0400 | | | | | | | | | | | |
| 0420 | 326 | | | | | | | 045 | 000 | .000 | .000 |
| 0440 | 322 | | | | | | | 042 | 000 | .000 | .000 |
| 0500 | 310 | | | | | | | 042 | 000 | .000 | .000 |
| 0520 | 278 | | | | | | | 053 | 011 | .000 | .000 |
| 0540 | 285 | | | | | | | 041 | 000 | .000 | .000 |
| 0600 | 289 | | | | | | | 039 | 000 | .000 | .000 |
| 0620 | 277 | | | | | | | 041 | 000 | .000 | .000 |
| 0640 | 284 | | | | | | | 040 | 000 | .000 | .000 |
| 0700 | 228 | | | | | | | 040 | 000 | .023 | .000 |
| 0720 | 230 | | | | | | | 040 | 000 | .020 | .000 |
| 0740 | 233 | | | | | | | 040 | 000 | .047 | .000 |
| 0800 | 237 | | | | | | | 040 | 000 | .022 | .000 |
| 0820 | 310 | | | | | | | 040 | 000 | .015 | .000 |
| 0840 | 353 | | | | | | | 040 | 000 | .000 | .000 |

TABLE A.8 CANTON TO WAKE, STAR FISH

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|---------|--------------------|------------------------------------------|---------|---------|------|-----------|--------------|-----------------|
| | | 386-359 | 289-280 | 13E-132 | 096-091 11A-109 | 121-080 063-061 064-060 066-061 | 060-057 | 062-059 | | | | |
| 0900 | 040 | | | | | | | | 040 | .000 | .000 | |
| 0920 | 640 | | | | | | | | 040 | .040 | .000 | |
| 0940 | 281 | | | | | | | | 000 | .000 | .009 | |
| 1000 | 398 | 386-359 | 289-280 | | | | | | .101 | .000 | .000 | |
| 1040 | 078 | | | | | | | | 000 | .000 | .007 | |
| 1040 | 079 | | | | | | | | 041 | .000 | .013 | |
| 1100 | 238 | | | | | | | | .026 | .034 | .017 | |
| 1120 | 237 | | | | | | | | .182 | .000 | .000 | |
| 1140 | 221 | | | 13E-132 | | | | | .011 | .000 | .000 | |
| 1200 | 209 | | | | | | | | .024 | .006 | .000 | |
| 1220 | 215 | | | | | | | | .030 | .070 | .000 | |
| 1240 | 182 | | | | | | | | 000 | .000 | .000 | |
| 1300 | 222 | | | | | | | | 000 | .000 | .000 | |
| 1320 | 232 | | | | | | | | 000 | .000 | .000 | |
| 1340 | 238 | | | | | | | | 000 | .000 | .000 | |
| 1400 | 233 | | | | | | | | 000 | .000 | .000 | |
| 1420 | 218 | | | | | | | | 000 | .000 | .000 | |
| 1440 | 210 | | | | | | | | 000 | .000 | .000 | |
| 1500 | 195 | | | | | | | | 000 | .015 | .030 | |
| 1520 | 174 | | | | | | | | 000 | .000 | .231 | |
| 1540 | 174 | | | | | | | | 000 | .053 | .030 | |
| 1600 | 177 | | | | | | | | 000 | .086 | .233 | |
| 1620 | 180 | | | | | | | | 000 | .128 | .163 | |
| 1640 | 186 | | | | | | | | 000 | .017 | .000 | |
| 1700 | 193 | | | | | | | | 000 | .000 | .000 | |
| 1720 | 160 | | | | | | | | 000 | .046 | .000 | |
| 1740 | 142 | | | | | | | | 000 | .091 | .000 | |
| 1800 | 156 | | | | | | | | 000 | .016 | .000 | |
| 1820 | 208 | | | | | | 067-065 | | 000 | .052 | .000 | |
| 1840 | | | | | | | | | 018 | .104 | .149 | |
| 1900 | | | | | | | | | 000 | .049 | .000 | |
| 1920 | 223 | | | | | | | | 000 | .020 | .027 | |
| 1940 | 236 | | | | | | | | 000 | .038 | .013 | |
| 2000 | 222 | | | | | | | | 000 | .000 | .000 | |
| 2020 | 203 | | | | | | | | 000 | .033 | .036 | |
| 2040 | 205 | | | | | | | | 000 | .133 | .000 | |
| | | | | | | | | | 000 | .010 | .000 | |

TABLE A.8 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 2100 | 192 | | | | | | | | 111 | 000 | .000 | .056 |
| 2120 | | | | | | | | | | | | .000 |
| 2140 | 197 | | | | | | | | 111 | 000 | .032 | .000 |
| 2200 | 203 | | | | | | | | 112 | 000 | .000 | .000 |
| 2220 | | | | | | | | | | | | .135 |
| 2240 | 208 | | | | | | | | 091 | 000 | .185 | .000 |
| 2300 | 203 | | | | | | | | 078 | 000 | .031 | .084 |
| 2320 | 203 | | | | | | | | 082 | 000 | .000 | .000 |
| 2340 | 210 | | | | | | | | 083 | 000 | .000 | .000 |
| 0000 | | | | | | | | | | | | .000 |
| 0020 | | | | | | | | | | | | .000 |
| 0040 | | | | | | | | | | | | .000 |
| 0100 | | | | | | | | | | | | .121 |
| 0120 | 157 | | | | | | | | 083 | 000 | .000 | .000 |
| 0140 | 195 | | | | | | | | 077 | 000 | .000 | .000 |
| 0200 | 216 | | | | | | | | 077 | 000 | .000 | .000 |
| 0220 | 202 | | | | | | | | 076 | 000 | .000 | .000 |
| 0240 | 200 | | | | | | | | 077 | 000 | .000 | .000 |
| 0300 | | | | | | | | | | | | .000 |
| 0320 | 204 | | | | | | | | 081 | 000 | .000 | .000 |
| 0340 | 216 | | | | | | | | 077 | 000 | .039 | .000 |
| 0400 | 232 | | | | | | | | 077 | 000 | .008 | .000 |
| 0420 | 241 | | | | | | | | 083 | 000 | .031 | .000 |
| 0440 | 245 | | | | | | | | 082 | 000 | .005 | .000 |
| 0500 | 250 | | | | | | | | 077 | 000 | .006 | .000 |
| 0520 | 250 | | | | | | | | 083 | 000 | .033 | .000 |
| 0540 | 263 | | | | | | | | 071 | 000 | .069 | .000 |
| 0600 | 268 | | | | | | | | 072 | 000 | .089 | .000 |
| 0620 | 269 | | | | | | | | 068 | 000 | .075 | .000 |
| 0640 | 264 | | | | | | | | 052 | 000 | .078 | .000 |
| 0700 | 253 | | | | | | | | 051 | 000 | .143 | .000 |
| 0720 | 255 | | | | | | | | 046 | 000 | .000 | .000 |
| 0740 | 279 | | | | | | | | 046 | 000 | .000 | .000 |
| 0800 | 267 | | | | | | | | 045 | 000 | .000 | .000 |
| 0820 | 288 | | | | | | | | 045 | 000 | .040 | .000 |
| 0840 | 315 | | | | | | | | 040 | 000 | .079 | .000 |

TABLE A.9 CANTON TO VITI LEVU, STAR FISH

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|--|--|--|--|-----|-----------|--------------|-----------------|
| | | 576-560 | 250-191 | | | | | | | | |
| 0900 | 619 | | | | | | | 214 | 000 | .021 | .023 |
| 0920 | 640 | | | | | | | 055 | 000 | .084 | .073 |
| 0940 | 598 | | | | | | | 040 | 000 | .063 | .022 |
| 1000 | 642 | | | | | | | 040 | 000 | .102 | .097 |
| 1020 | 512 | | | | | | | 040 | .311 | .078 | .114 |
| 1040 | 592 | | | | | | | 040 | .033 | .149 | .104 |
| 1100 | 556 | | | | | | | 040 | .004 | .059 | .072 |
| 1120 | 606 | | | | | | | 040 | 000 | .146 | .210 |
| 1140 | 063 | | | | | | | 041 | 000 | .079 | .158 |
| 1200 | | | | | | | | | | | .000 |
| 1220 | 632 | | | | | | | 041 | .012 | .059 | .015 |
| 1240 | 623 | | | | | | | 041 | .005 | .087 | .052 |
| 1300 | 525 | | | | | | | 041 | .017 | .087 | .018 |
| 1320 | | | | | | | | | | | .032 |
| 1340 | 554 | | | | | | | 042 | 000 | .021 | .043 |
| 1400 | | | | | | | | | | | .000 |
| 1420 | 533 | | | | | | | 040 | 000 | .043 | .000 |
| 1440 | 455 | | | | | | | 041 | 000 | .080 | .045 |
| 1500 | 507 | | | | | | | 041 | .015 | .099 | .100 |
| 1520 | 478 | | | | | | | 041 | .018 | .158 | .098 |
| 1540 | 435 | | | | | | | 041 | 000 | .014 | .000 |
| 1600 | 356 | | | | | | | 041 | .025 | .036 | .071 |
| 1620 | 269 | | | | | | | 041 | .026 | .182 | .289 |
| 1640 | 350 | | | | | | | 040 | 000 | .235 | .340 |
| 1700 | 429 | | | | | | | 040 | 000 | .116 | .221 |
| 1720 | 429 | | | | | | | 040 | .026 | .107 | .214 |
| 1740 | | | | | | | | | | | .000 |
| 1800 | 402 | | | | | | | 047 | .023 | .053 | .063 |
| 1820 | 494 | | | | | | | 061 | 000 | .000 | .000 |
| 1840 | 551 | | | | | | | 060 | .006 | .161 | .270 |
| 1900 | | | | | | | | | | | .064 |
| 1920 | 427 | | | | | | | 081 | 000 | .120 | .000 |
| 1940 | 481 | | | | | | | 054 | .005 | .119 | .000 |
| 2000 | 454 | | | | | | | 056 | 000 | .254 | .000 |
| 2020 | | | | | | | | | | | .000 |
| 2040 | | | | | | | | | | | .000 |

0900 GMT 9 JULY

TABLE A.10 CANTON TO TUTUILA, STAR FISH

| TIME | MOF | GAPS IN HF SPECTRUM | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|-----|-----------|--------------|-----------------|
| 0900 | 618 | | 040 | .076 | .327 | .278 |
| 0920 | 625 | | 040 | .000 | .160 | .140 |
| 0940 | 625 | | 040 | .000 | .198 | .323 |
| 1000 | 547 | | 040 | .000 | .209 | .000 |
| 1020 | | | | | | |
| 1040 | 413 | | 040 | .000 | .402 | .473 |
| 1100 | 481 | 179-170 | 041 | .020 | .225 | .466 |
| 1120 | 513 | | 041 | .008 | .312 | .225 |
| 1140 | 476 | 170-162 | 040 | .018 | .193 | .312 |
| 1200 | 540 | 157-150 | 040 | .014 | .048 | .193 |
| 1220 | 482 | | 041 | .000 | .389 | .048 |
| 1240 | 458 | | 040 | .000 | .025 | .389 |
| 1300 | 469 | | 040 | .000 | .154 | .000 |
| 1320 | 501 | | 039 | .000 | .158 | .308 |
| 1340 | 513 | | 040 | .000 | .062 | .047 |
| 1400 | | | | | | |
| 1420 | 346 | 179-171 | 041 | .026 | .159 | .000 |
| 1440 | 322 | | 041 | .000 | .226 | .127 |
| 1500 | 445 | | 040 | .077 | .375 | .367 |
| 1520 | 353 | | 041 | .000 | .249 | .343 |
| 1540 | 290 | | 041 | .024 | .162 | .170 |
| 1600 | 365 | | 041 | .015 | .055 | .173 |
| 1620 | 358 | | 041 | .000 | .099 | .055 |
| 1640 | 432 | | 040 | .163 | .095 | .000 |
| 1700 | 333 | | 040 | .000 | .012 | .095 |
| 1720 | | | | | | |
| 1740 | 324 | | 053 | .048 | .041 | .025 |
| 1800 | 347 | | 041 | .350 | .041 | .051 |
| 1820 | 222 | | 041 | .265 | .033 | .082 |
| 1840 | 273 | | 042 | .017 | .009 | .041 |
| 1900 | 203 | | 046 | .140 | .000 | .000 |
| 1920 | 267 | | 040 | .000 | .140 | .000 |
| 1940 | 181 | | 040 | .071 | .025 | .280 |
| 2000 | 370 | | 040 | .000 | .012 | .000 |
| 2020 | 252 | | 040 | .000 | .000 | .024 |
| 2040 | 308 | | 041 | .000 | .000 | .000 |

0900 GRT 9 JULY

TABLE A.10 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|--|---------|---------|-----|-----------|--------------|-----------------|
| 2100 | 311 | | | | | | | 040 | 000 | .014 | .029 |
| 2120 | 247 | | | | | | | 040 | 000 | .000 | .000 |
| 2140 | 473 | | | | | | | 040 | .132 | .000 | .000 |
| 2200 | 248 | | | 246-236 | | | | 040 | 000 | .000 | .000 |
| 2220 | 240 | | | 194-183 | | | | 040 | 000 | .000 | .000 |
| 2240 | 236 | | | 194-184 | | | | 040 | .033 | .042 | .000 |
| 2300 | | | | | | | | 040 | .168 | .000 | .000 |
| 2320 | 274 | | | | | | | 040 | 000 | .109 | .000 |
| 2340 | 274 | | | | | | | 040 | 000 | .105 | .000 |
| 0000 | | | | | | | | 040 | 000 | .000 | .000 |
| 0020 | 289 | | | | | | | 040 | 000 | .227 | .000 |
| 0040 | 281 | | | | | | | 040 | 000 | .000 | .000 |
| 0100 | 293 | | | 189-181 | | | | 040 | 000 | .242 | .000 |
| 0120 | 339 | | | | | | | 040 | .032 | .000 | .000 |
| 0140 | 302 | | | | | | | 040 | 000 | .117 | .000 |
| 0200 | 324 | | | | | | | 040 | 000 | .071 | .077 |
| 0220 | 320 | | | | | | | 040 | 000 | .070 | .140 |
| 0240 | | | | | | | | 040 | 000 | .037 | .074 |
| 0300 | 277 | | | | | | | 040 | 000 | .000 | .062 |
| 0320 | 291 | | | | | | | 040 | 000 | .000 | .000 |
| 0340 | 311 | | | | | | | 040 | 000 | .049 | .000 |
| 0400 | 327 | | | | | | | 040 | 000 | .000 | .000 |
| 0420 | 330 | | | | | | | 040 | 000 | .022 | .000 |
| 0440 | 321 | | | | | | | 040 | 000 | .000 | .000 |
| 0500 | 359 | | | | | | | 040 | 000 | .000 | .000 |
| 0520 | 287 | | | | | | | 040 | 000 | .000 | .000 |
| 0540 | 279 | | | | | | | 040 | 000 | .000 | .000 |
| 0600 | 309 | | | | | | | 040 | .033 | .000 | .000 |
| 0620 | 319 | | | | | | | 040 | .097 | .079 | .093 |
| 0640 | 302 | | | | | | | 040 | .165 | .090 | .090 |
| 0700 | | | | | | 233-224 | 202-187 | 040 | .149 | .022 | .000 |
| 0720 | 311 | | | | | | | 040 | 000 | .126 | .000 |
| 0740 | 457 | | | | | | | 040 | 000 | .126 | .069 |
| 0800 | 384 | | | | | | | 040 | .161 | .180 | .316 |
| 0820 | 475 | | | | | | | 040 | .172 | .497 | .400 |
| 0840 | 481 | | | | | | | 040 | .207 | .000 | .000 |
| | | | | | | | | 040 | .227 | .272 | .278 |

TABLE A.11 CANTON TO RAROTONGA, STAR FISH

0900 GMT 9 JULY

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|--|---------|---------|--|--|-----|-----------|--------------|-----------------|
| 0900 | 186 | | | | | | | | 111 | 000 | .021 | .000 |
| 0920 | 532 | | | | | | | | 041 | 000 | .038 | .000 |
| 0940 | 444 | 410-394 | | | | | | | 041 | .040 | .048 | .040 |
| 1000 | | | | | | | | | | | | .054 |
| 1020 | 259 | | 249-191 | | | | | | 067 | .839 | .043 | .044 |
| 1040 | | | | | | | | | | | | .034 |
| 1100 | 415 | | | | | | | | 040 | .021 | .043 | .027 |
| 1120 | 433 | | | | | | | | 040 | .013 | .029 | .019 |
| 1140 | 426 | | | | | | | | 040 | 000 | .070 | .069 |
| 1200 | 344 | | | | | | | | 040 | .046 | .058 | .043 |
| 1220 | 307 | | 327-313 | | | | | | 041 | 000 | .057 | .014 |
| 1240 | 302 | | | | | | | | 041 | 000 | .007 | .022 |
| 1300 | 308 | | | | | | | | 040 | 000 | .043 | .056 |
| 1320 | 320 | | | | | | | | 042 | 000 | .013 | .040 |
| 1340 | 301 | | | | 140-131 | | | | 043 | .062 | .074 | .020 |
| 1400 | | | | | | | | | | | | .034 |
| 1420 | 286 | | | | | | | | 045 | .029 | .119 | .140 |
| 1440 | 212 | | | | | | | | 040 | .035 | .157 | .246 |
| 1500 | 193 | | | | | | | | 040 | .033 | .120 | .148 |
| 1520 | 214 | | | | | | | | 041 | 020 | .053 | .080 |
| 1540 | 186 | | | | | | | | 040 | .034 | .078 | .134 |
| 1600 | | | | | | | | | | | | .060 |
| 1620 | 135 | | | | | | | | 041 | .032 | .156 | .000 |
| 1640 | 125 | | | | | | | | 042 | 000 | .134 | .000 |
| 1700 | 118 | | | | | | | | 040 | .026 | .331 | .626 |
| 1720 | 103 | | | | | | | | 043 | .033 | .205 | .301 |
| 1740 | | | | | | | | | | | | .266 |
| 1800 | | | | | | | | | | | | .346 |
| 1820 | 199 | | | | | | | | 046 | .516 | .057 | .000 |
| 1840 | | | | | | | | | | | | .043 |
| 1900 | | | | | | | | | | | | .188 |
| 1920 | | | | | | | | | | | | .181 |
| 1940 | 239 | | | | | | | | 070 | .024 | .099 | .000 |
| 2000 | | | | | | 156-152 | | | | | | .036 |
| 2020 | | | | | | | | | | | | .000 |
| 2040 | | | | | | | | | | | | .000 |

TABLE A.11 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|--|--|--------------------|---------|------------|--------------|--------------|-----------------|
| 2100 | | | | | | | | | | .000 | |
| 2120 | | | | | | | | | | .014 | |
| 2140 | | | | | | | | | | .000 | |
| 2200 | | | | | | | | | | .000 | |
| 2220 | | | | | | | | | | .022 | |
| 2240 | | | | | | | | | | .074 | |
| 2300 | 222 | | | | | | | | | .026 | |
| 2320 | 217 | | | | | | | | | .000 | |
| 2340 | 210 | 143-139 | | | | | | 096 | 000 | .000 | |
| 0000 | 204 | | | | | 103-076 104-081 | | 073 078 | .215 .174 | .005 .000 | |
| 0040 | | | | | | | | 069 | 000 | .022 | |
| 0100 | 220 | | | | | | | 069 | 000 | .000 | |
| 0120 | 258 | | | | | | | 078 | 000 | .000 | |
| 0140 | 279 | | | | | | | 060 | 000 | .000 | |
| 0200 | 307 | | | | | | | 066 | 000 | .000 | |
| 0220 | 365 | 149-143 | | | | 116-098 | | 058 | .078 | .038 | |
| 0240 | | | | | | | | | | .000 | |
| 0300 | 383 | | | | | | | | | .000 | |
| 0320 | 331 | | | | | | | 051 | 000 | .000 | |
| 0340 | 280 | | | | | | | 055 | 000 | .000 | |
| 0400 | 292 | | | | | | | 060 | 000 | .003 | |
| 0420 | 283 | | | | | | | 050 | 000 | .003 | |
| 0440 | 291 | | | | | 115-102 | | 046 | .055 | .000 | |
| 0500 | 284 | | | | | | | 045 | .023 | .000 | |
| 0520 | 289 | | | | | | | 046 | .009 | .000 | |
| 0540 | | | | | | 091-082 | | 042 | .036 | .000 | |
| 0600 | 270 | | | | | | | | | .003 | |
| 0620 | 241 | | | | | | | 042 | 000 | .000 | |
| 0640 | | | | | | | | 042 | 000 | .000 | |
| 0700 | | | | | | | | | | .046 | |
| 0720 | 226 | | | | | | | | | .077 | |
| 0740 | 228 | 176-146 | 143-122 | | | 087-081 114-095 | 090-082 | 042 | .033 | .036 | |
| 0800 | 194 | | | | | | | 042 | .419 | .052 | |
| 0820 | 185 | | | | | | | 042 | 000 | .065 | |
| 0840 | 211 | 101-095 | | | | | | 042 | 000 | .158 | |
| | | | | | | | | 042 | .036 | .145 | |

TABLE A.12 ROL-NAMUR TO TUTUILA, STAR FISH

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--------------------|---------|-------------------------------|---------|--------------------|-----|-----------|--------------|-----------------|
| | | 245-236 | 396-376 375-355 | 160-153 | 182-172 155-146 157-153 | 096-092 | 096-091 122-116 | | | | |
| 0900 | 252 | | | | | | | 193 | .153 | .066 | .052 |
| 0920 | 513 | | | | | | | 040 | .000 | .000 | .000 |
| 0940 | 354 | | | | | | | 041 | .000 | .019 | .038 |
| 1000 | 249 | | | | | | | 040 | .019 | .030 | .000 |
| 1020 | 415 | | | | | | | 040 | .000 | .047 | .079 |
| 1040 | 472 | | | | | | | 040 | .046 | .010 | .010 |
| 1100 | 459 | | | | | | | 041 | .060 | .203 | .000 |
| 1140 | | | | | | | | 040 | .023 | .005 | .010 |
| 1200 | 301 | | | | | | | 040 | .000 | .245 | .018 |
| 1220 | 302 | | | | | | | 040 | .019 | .123 | .038 |
| 1240 | 402 | | | | | | | 040 | .006 | .075 | .040 |
| 1300 | 389 | | | | | | | 042 | .000 | .037 | .000 |
| 1320 | 392 | | | | | | | 041 | .000 | .024 | .000 |
| 1340 | 400 | | | | | | | 041 | .000 | .063 | .035 |
| 1400 | | | | | | | | 041 | .028 | .062 | .000 |
| 1420 | 322 | | | | | | | 041 | .073 | .066 | .131 |
| 1440 | 275 | | | | | | | 041 | .047 | .077 | .124 |
| 1500 | 233 | | | | | | | 041 | .102 | .011 | .000 |
| 1520 | 227 | | | | | | | 041 | .076 | .027 | .026 |
| 1540 | 211 | | | | | | | 041 | .000 | .105 | .000 |
| 1600 | 215 | | | | | | | 041 | .026 | .027 | .000 |
| 1620 | 158 | | | | | | | 040 | .000 | .000 | .000 |
| 1640 | 196 | | | | | | | 040 | .000 | .000 | .000 |
| 1700 | 189 | | | | | | | 040 | .000 | .000 | .000 |
| 1720 | 151 | | | | | | | 040 | .000 | .059 | .000 |
| 1740 | | | | | | | | | | | .071 |
| 1800 | | | | | | | | | | | .000 |
| 1820 | 159 | | | | | | | 074 | .000 | .121 | .169 |
| 1840 | | | | | | | | | | | .010 |
| 1900 | 225 | | | | | | | 058 | .000 | .005 | .000 |
| 1920 | 261 | | | | | | | 054 | .048 | .000 | .000 |
| 1940 | 239 | | | | | | | 055 | .000 | .000 | .000 |
| 2000 | 260 | | | | | | | 063 | .000 | .009 | .015 |
| 2020 | 270 | | | | | | | 066 | .000 | .000 | .000 |
| 2040 | 313 | | | | | | | 071 | .000 | .030 | .000 |

0900 GMT 9 JULY

TABLE A.12 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|---------|---------|--|-----|-----------|--------------|-----------------|
| 2100 | 316 | | | | | | | 072 | 000 | .000 | .000 |
| 2120 | 311 | | | | | | | 076 | 000 | .008 | .015 |
| 2140 | 305 | | | | | | | 075 | 000 | .003 | .000 |
| 2200 | 319 | | | | | | | 065 | .055 | .005 | .016 |
| 2220 | 305 | | | | | | | 078 | 000 | .000 | .000 |
| 2240 | 266 | | | | | | | 088 | 000 | .000 | .000 |
| 2300 | 265 | | | | | | | 082 | 000 | .009 | .038 |
| 2320 | 281 | | | | | | | 082 | 000 | .000 | .018 |
| 0000 | | | | | | | | | 000 | .000 | .000 |
| 0020 | 297 | | | | | | | 082 | 000 | .020 | .000 |
| 0040 | 289 | | | | | | | 074 | 000 | .025 | .000 |
| 0100 | 300 | | | | | | | 070 | 000 | .006 | .000 |
| 0120 | 300 | | | | | | | 073 | 000 | .000 | .000 |
| 0140 | 290 | | | | | | | 075 | 000 | .000 | .000 |
| 0200 | 286 | | | | | | | 075 | 000 | .000 | .000 |
| 0220 | 282 | | | | | | | 075 | 000 | .196 | .392 |
| 0240 | | | | | | | | 077 | 000 | .016 | .017 |
| 0300 | 296 | | | | | | | 071 | 000 | .000 | .000 |
| 0320 | 301 | | | | | | | 072 | 000 | .000 | .000 |
| 0340 | 313 | | | | | | | 073 | 000 | .025 | .000 |
| 0400 | 322 | | | | | 142-138 | | 064 | .016 | .003 | .000 |
| 0420 | 353 | | | | 225-212 | | | 067 | .045 | .005 | .000 |
| 0440 | 343 | | | | | | | 063 | 000 | .000 | .000 |
| 0500 | 353 | | | | | | | 063 | 000 | .005 | .000 |
| 0520 | 325 | | | | | | | 063 | 000 | .000 | .000 |
| 0540 | 307 | | | | | | | 081 | 000 | .000 | .000 |
| 0600 | 294 | | | | | | | 054 | 000 | .000 | .000 |
| 0620 | 302 | | | | | 196-179 | | 054 | .213 | .000 | .000 |
| 0640 | 307 | | | | 248-233 | | | 055 | 000 | .000 | .000 |
| 0700 | | | | | | | | 040 | 000 | .013 | .000 |
| 0720 | | | | | | | | | 000 | .000 | .000 |
| 0740 | 400 | | | | | | | 040 | 000 | .010 | .029 |
| 0800 | 480 | | | | | | | 040 | 000 | .052 | .064 |
| 0820 | 480 | | | | | | | 040 | 000 | .096 | .096 |
| 0840 | 489 | | | | | | | 040 | 000 | .067 | .117 |

TABLE A.13 ROI-NAMUR TO VITI LEVU, STAR FISH

0900 GMT 9 JULY

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0900 | 258 | | | | | | | | 225 | 000 | .071 | .093 |
| 0920 | 255 | | | | | | | | 048 | .032 | .065 | .058 |
| 0940 | 319 | | | | | | | | 041 | .054 | .051 | .051 |
| 1000 | 279 | | | | | | | | 041 | .290 | .101 | .101 |
| 1020 | 272 | | | | | | | | 040 | .135 | .181 | .130 |
| 1040 | 202 | | | | | | | | 040 | .562 | .217 | .179 |
| 1100 | 179 | | | | | | | | 040 | .396 | .148 | .103 |
| 1120 | | | | | | | | | | | | .131 |
| 1140 | 341 | | | | | | | | 041 | .160 | .159 | .160 |
| 1200 | | | | | | | | | | | | .109 |
| 1220 | 324 | | | | | | | | 063 | .287 | .153 | .139 |
| 1240 | 315 | | | | | | | | 043 | .221 | .245 | .257 |
| 1300 | 262 | | | | | | | | 056 | .359 | .208 | .221 |
| 1320 | 302 | | | | | | | | 041 | .000 | .223 | .295 |
| 1340 | 286 | | | | | | | | 042 | .049 | .223 | .333 |
| 1400 | | | | | | | | | | | | .152 |
| 1420 | | | | | | | | | | | | .165 |
| 1440 | 306 | | | | | | | | 041 | .023 | .269 | .419 |
| 1500 | 252 | | | | | | | | 041 | .218 | .146 | .159 |
| 1520 | 198 | | | | | | | | 041 | .331 | .077 | .098 |
| 1540 | 140 | | | | | | | | 044 | .198 | .247 | .000 |
| 1600 | 195 | | | | | | | | 041 | .195 | .101 | .070 |
| 1620 | | | | | | | | | | | | .123 |
| 1640 | 279 | | | | | | | | 041 | .038 | .210 | .235 |
| 1700 | 238 | | | | | | | | 040 | .106 | .119 | .167 |
| 1720 | 198 | | | | | | | | 040 | .057 | .149 | .120 |
| 1740 | | | | | | | | | | | | .137 |
| 1800 | 089 | | | | | | | | 040 | .061 | .167 | .157 |
| 1820 | 109 | | | | | | | | 040 | .043 | .106 | .080 |
| 1840 | 152 | | | | | | | | 053 | .051 | .141 | .147 |
| 1900 | 200 | | | | | | | | 065 | .074 | .254 | .331 |
| 1920 | 235 | | | | | | | | 055 | .033 | .160 | .279 |
| 1940 | 237 | | | | | | | | 061 | .000 | .131 | .233 |
| 2000 | 236 | | | | | | | | 061 | .000 | .198 | .198 |
| 2020 | 261 | | | | | | | | 073 | .000 | .181 | .181 |
| 2040 | | | | | | | | | | | | .142 |

TABLE A.13 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | DKGD AVERAGE | SINGLE DKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 2100 | 268 | | | | | | | 085 | 000 | .049 | .142 |
| 2140 | 279 | | | | | | | 084 | 000 | .030 | .049 |
| 2200 | 263 | | | | | | | 103 | 000 | .000 | .047 |
| 2240 | 244 | | | | | | | 084 | 000 | .008 | .000 |
| 2300 | 292 | | | | | | | 082 | 000 | .000 | .000 |
| 2320 | 253 | | | | | | | 085 | 000 | .000 | .000 |
| 2340 | 255 | | | | | | | 094 | 000 | .000 | .000 |
| 0000 | | | | | | | | | 000 | .000 | .000 |
| 0020 | 310 | | | | | | | 084 | 000 | .006 | .000 |
| 0040 | 297 | | | | | | | 082 | 000 | .010 | .000 |
| 0100 | 343 | | | | | | | | 000 | .016 | .008 |
| 0120 | 309 | | | | | | | 077 | 000 | .000 | .016 |
| 0140 | | | | | | | | 082 | 000 | .000 | .000 |
| 0200 | 283 | | | | | | | | 000 | .000 | .000 |
| 0220 | 267 | | | | | | | 083 | 000 | .000 | .000 |
| 0240 | 292 | | | | | | | 082 | 000 | .000 | .000 |
| 0300 | 354 | | | | | | | 084 | 000 | .004 | .000 |
| 0320 | | | | | | | | 081 | .088 | .007 | .014 |
| 0340 | | | | | | | | | | .000 | .009 |
| 0400 | 387 | | | | | | | 076 | .006 | .000 | .000 |
| 0420 | 317 | | | | | | | 082 | 000 | .000 | .000 |
| 0440 | 310 | | | | | | | 079 | 000 | .000 | .000 |
| 0500 | 320 | | | | | | | 076 | 000 | .012 | .012 |
| 0520 | 302 | | | | | | | 082 | .055 | .041 | .041 |
| 0540 | 281 | | | | | | | 086 | 000 | .013 | .026 |
| 0600 | | | | | | | | | | .000 | .000 |
| 0620 | | | | | | | | | | .000 | .000 |
| 0640 | | | | | | | | | | .000 | .000 |
| 0700 | 273 | | | | | | | 042 | 000 | .088 | .000 |
| 0720 | | | | | | | | | | .000 | .000 |
| 0740 | | | | | | | | | | .000 | .000 |
| 0800 | 251 | | | | | | | 041 | .071 | .122 | .167 |
| 0820 | 267 | | | | | | | 041 | .119 | .088 | .164 |
| 0840 | 264 | | | | | | | 041 | 000 | .099 | .072 |
| | | | | | | | | | | .000 | .165 |

TABLE A.14 ROI-NAMUR TO RAROTONGA, STAR FISH

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|--|--|--|-----|-----------|--------------|-----------------|
| | | | | | | | | | | | |
| 0900 | 040 | | | | | | | 040 | B | .015 | .000 |
| 0920 | 319 | | | | | | | 041 | 000 | .175 | .000 |
| 0940 | 233 | | | | | | | 041 | 000 | .138 | .000 |
| 1000 | | | | | | | | | | | |
| 1020 | 197 | | | | | | | 040 | .127 | .173 | .000 |
| 1040 | | | | | | | | | | | |
| 1100 | 205 | | | | | | | 041 | .061 | .244 | .077 |
| 1120 | 273 | | | | | | | 040 | .056 | .174 | .170 |
| 1140 | 248 | | | 155-150 | | | | 041 | .019 | .160 | .160 |
| 1200 | 230 | | | | | | | 040 | .074 | .075 | .068 |
| 1220 | 193 | | | | | | | 040 | .020 | .137 | .206 |
| 1240 | 210 | | | | | | | 041 | 000 | .038 | .000 |
| 1300 | 209 | | | | | | | 040 | 000 | .011 | .000 |
| 1320 | 226 | | | | | | | 043 | 000 | .066 | .000 |
| 1340 | 201 | | | | | | | 044 | .363 | .036 | .000 |
| 1400 | | | | | | | | | | | |
| 1420 | 198 | | | | | | | 047 | .113 | .186 | .167 |
| 1440 | 160 | | | | | | | 040 | .108 | .115 | .146 |
| 1500 | 116 | | | | | | | 041 | .053 | .198 | .041 |
| 1520 | 115 | | | | | | | 041 | .149 | .053 | .109 |
| 1540 | 134 | | | | | | | 046 | .080 | .030 | .053 |
| 1600 | | | | | | | | | | | |
| 1620 | 139 | | | | | | | 045 | .181 | .413 | .043 |
| 1640 | 136 | | | | | | | 042 | 000 | .075 | .000 |
| 1700 | 127 | | | | | | | 040 | .080 | .328 | .019 |
| 1720 | 104 | | | | | | | 044 | .033 | .617 | .019 |
| 1740 | 117 | | | | | | | 061 | .071 | .024 | .048 |
| 1800 | | | | | | | | | | | |
| 1820 | 080 | | | | | | | 061 | 000 | .264 | .000 |
| 1840 | | | | | | | | | | | |
| 1900 | | | | | | | | 061 | 000 | .357 | .000 |
| 1920 | | | | | | | | | | | |
| 1940 | | | | | | | | | | | |
| 2000 | 223 | | | | | | | 106 | 000 | .066 | .000 |
| 2020 | | | | | | | | | | | |
| 2040 | | | | | | | | | | | |

0900 GMT 9 JULY

TABLE A.14 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|--|--|---------|-----|-----------|--------------|-----------------|
| 2100 | | | | | | | | | | .000 | |
| 2120 | | | | | | | | | | .000 | |
| 2140 | | | | | | | | | | .090 | |
| 2200 | | | | | | | | | | .000 | |
| 2220 | | | | | | | | | | .069 | |
| 2240 | | | | | | | | | | .000 | |
| 2300 | | | | | | | | | | .000 | |
| 2320 | 219 | | | 209-186 | | | 166-146 | 137 | .524 | .000 | |
| 2340 | 242 | | | 206-147 | | | | 149 | .000 | .000 | |
| 0000 | 230 | | | | | | | 127 | .573 | .000 | |
| 0020 | 263 | | | | | | | 204 | .000 | .000 | |
| 0040 | | | | | | | | | | .000 | |
| 0100 | | | | | | | | | | .130 | |
| 0120 | 299 | | | | | | | 119 | .294 | .083 | |
| 0140 | 244 | | | 199-155 | | | 153-144 | 133 | .297 | .068 | |
| 0200 | 249 | | | 185-158 | | | 149-143 | 125 | .282 | .053 | |
| 0220 | 259 | | | 182-156 | | | 152-143 | 129 | .000 | .257 | |
| 0240 | | | | | | | | | | .071 | |
| 0300 | 282 | | | | | | | 153 | .000 | .259 | |
| 0320 | 280 | | | | | | | 135 | .000 | .000 | |
| 0340 | 278 | | | 182-158 | | | | 117 | .149 | .000 | |
| 0400 | 289 | | | | | | | 124 | .000 | .000 | |
| 0420 | 283 | | | 181-135 | | | | 117 | .277 | .000 | |
| 0440 | 271 | | | | | | | 116 | .000 | .000 | |
| 0500 | | | | | | | | | | .000 | |
| 0520 | 247 | | | | | | 100-094 | 089 | .038 | .000 | |
| 0540 | | | | | | | | | | .000 | |
| 0600 | 271 | | | 174-150 | | | 093-074 | 064 | .208 | .000 | |
| 0620 | 263 | | | | | | | 063 | .000 | .000 | |
| 0640 | | | | | | | | | | .000 | |
| 0700 | | | | | | | | | | .000 | |
| 0720 | 247 | | | | | | | | | .000 | |
| 0740 | 251 | | | | | | | | | .192 | |
| 0800 | 235 | | | 169-146 | | | 120-113 | 053 | .000 | .000 | |
| 0820 | 236 | | | | | | 110-082 | 056 | .323 | .000 | |
| 0840 | 253 | | | 218-189 | | | 100-093 | 052 | .000 | .000 | |
| | | | | | | | 064-061 | 056 | .000 | .243 | |
| | | | | | | | | 053 | .195 | .262 | |
| | | | | | | | 063-058 | | | .000 | |

TABLE A.15 ROI-NAMUR TO MIDWAY, STAR FISH

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|---------|-----------|--------------|-----------------|
| 0900 | 229 | | | | | | | 040 | 000 | .000 | .000 |
| 0920 | 157 | | | | | | | 047 | 000 | .000 | .000 |
| 0940 | 110 | | | | | | | 041 | .029 | .023 | .045 |
| 1000 | 095 | | | | | | | 048-046 | .037 | .018 | .054 |
| 1020 | 115 | | | | | | | 048-046 | .040 | .056 | .167 |
| 1040 | 113 | | | | | | | 048-045 | .000 | .044 | .133 |
| 1100 | 106 | | | | | | | 041 | .031 | .000 | .000 |
| 1120 | 111 | | | | | | | 048-046 | 000 | .000 | .000 |
| 1140 | | | | | | | | 040 | 000 | .000 | .000 |
| 1200 | 147 | | | | | | | 040 | .019 | .000 | .091 |
| 1220 | 153 | | | | | | | 047-045 | .018 | .068 | .000 |
| 1240 | 172 | | | | | | | 047-045 | 000 | .000 | .068 |
| 1300 | 165 | | | | | | | 080 | .024 | .036 | .000 |
| 1320 | 149 | | | | | | | 050-047 | .028 | .053 | .073 |
| 1340 | 133 | | | | | | | 047-044 | 000 | .137 | .158 |
| 1400 | | | | | | | | 040 | 000 | .000 | .000 |
| 1420 | 135 | | | | | | | 041 | .050 | .209 | .000 |
| 1440 | 560 | | | | | | | 000 | 000 | .000 | .000 |
| 1500 | 158 | | | | | | | 042 | 000 | .000 | .000 |
| 1520 | 158 | | | | | | | 041 | 000 | .043 | .000 |
| 1540 | 169 | | | | | | | 042 | 000 | .034 | .000 |
| 1600 | 195 | | | | | | | 041 | .047 | .040 | .000 |
| 1620 | 196 | | | | | | | 041 | 000 | .074 | .000 |
| 1640 | 201 | | | | | | | 040 | .019 | .038 | .000 |
| 1700 | 195 | | | | | | | 040 | .031 | .133 | .000 |
| 1720 | 160 | | | | | | | 040 | 000 | .000 | .000 |
| 1740 | 139 | | | | | | | 040 | 000 | .000 | .000 |
| 1800 | 134 | | | | | | | 040 | .081 | .000 | .000 |
| 1820 | 131 | | | | | | | 040 | .106 | .000 | .000 |
| 1840 | 151 | | | | | | | 050 | .074 | .000 | .000 |
| 1900 | 160 | | | | | | | 073 | .154 | .000 | .000 |
| 1920 | 199 | | | | | | | 074 | .233 | .000 | .000 |
| 1940 | 199 | | | | | | | 056 | .063 | .000 | .000 |
| 2000 | 229 | | | | | | | 061 | .036 | .000 | .000 |
| 2020 | 252 | | | | | | | 071 | .051 | .000 | .000 |
| 2040 | 256 | | | | | | | 072 | .022 | .020 | .040 |
| | | | | | | | | 073 | .093 | .008 | .023 |

0900 GMT 9 JULY

TABLE A.15 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|---------|--|-----|-----------|--------------|-----------------|
| 2100 | 237 | | | | | | | 106 | 000 | .012 | .035 |
| 2120 | 180 | | | | | | | 135 | .089 | .007 | .000 |
| 2140 | 159 | | | | | | | 106 | 000 | .000 | .000 |
| 2200 | 173 | | | | | | | 103 | 000 | .000 | .000 |
| 2240 | 167 | | | | | | | 111 | 000 | .000 | .000 |
| 2300 | | | | | | | | | | | .000 |
| 2320 | 152 | | | | | | | 122 | 000 | .000 | .000 |
| 2340 | 144 | | | | | | | 113 | 000 | .000 | .000 |
| 0000 | 154 | | | | | | | 113 | 000 | .015 | .000 |
| 0020 | 185 | | | | | | | 125 | .083 | .000 | .000 |
| 0040 | 159 | | | | | | | 125 | 000 | .000 | .000 |
| 0100 | 218 | | | | | | | 138 | 000 | .000 | .000 |
| 0120 | 207 | | | | | 134-127 | | 123 | .083 | .006 | .000 |
| 0140 | 217 | | | | | | | 137 | 000 | .012 | .000 |
| 0200 | 164 | | | | | | | 131 | 000 | .000 | .000 |
| 0220 | 226 | | | | | | | 117 | .183 | .020 | .000 |
| 0240 | 230 | | | | | | | 116 | .140 | .011 | .033 |
| 0300 | 239 | | | | | | | 080 | 000 | .020 | .000 |
| 0320 | 258 | | | | | | | 107 | 000 | .000 | .000 |
| 0340 | 250 | | | | | | | 073 | 000 | .017 | .000 |
| 0400 | 268 | | | | | | | 082 | 000 | .020 | .020 |
| 0420 | 256 | | | | | | | 086 | .029 | .006 | .000 |
| 0440 | 275 | | | | | | | 114 | 000 | .000 | .000 |
| 0500 | 272 | | | | | 124-119 | | 080 | 000 | .005 | .016 |
| 0520 | 265 | | | | | | | 088 | 000 | .000 | .000 |
| 0540 | 264 | | | | | | | 087 | 000 | .000 | .000 |
| 0600 | 265 | | | | | | | 086 | 000 | .000 | .000 |
| 0620 | | | | | | | | | | | .000 |
| 0640 | 249 | | | | | | | 079 | .047 | .000 | .000 |
| 0700 | 219 | | | | | 103-095 | | 080 | 000 | .000 | .000 |
| 0720 | | | | | | | | | | | .000 |
| 0740 | | | | | | | | | | | .000 |
| 0800 | | | | | | | | | | | .000 |
| 0820 | 241 | | | | | | | 041 | 000 | .000 | .000 |
| 0840 | 251 | | | | | | | 040 | 000 | .000 | .000 |
| 0840 | 249 | | | | | | | 040 | 000 | .000 | .000 |

TABLE A.16 KAUAI TO TUTUILA, STAR FISH

0900 GMT 9 JULY

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|--|--|--|--|-----|-----------|--------------|-----------------|
| 0900 | 345 | | | | | | | | | | .194 |
| 0920 | 318 | | | | | | | | | | .070 |
| 0940 | | 260-228 | 208-193 | | | | | | | | .103 |
| 1000 | | 234-226 | 177-145 | | | | | | | | .000 |
| 1020 | | | | | | | | | | | .052 |
| 1040 | 152 | | | | | | | | | | .000 |
| 1100 | 127 | | | | | | | | | | .000 |
| 1120 | 151 | | | | | | | | | | .000 |
| 1140 | | | | | | | | | | | .120 |
| 1200 | | | | | | | | | | | .000 |
| 1220 | | | | | | | | | | | .066 |
| 1240 | | | | | | | | | | | .246 |
| 1300 | | | | | | | | | | | .192 |
| 1320 | | | | | | | | | | | .092 |
| 1340 | | | | | | | | | | | .143 |
| 1400 | | | | | | | | | | | .102 |
| 1420 | | | | | | | | | | | .065 |
| 1440 | 151 | | | | | | | | | | .050 |
| 1500 | 133 | | | | | | | | | | .125 |
| 1520 | 187 | | | | | | | | | | .124 |
| 1540 | 152 | | | | | | | | | | .000 |
| 1600 | 157 | | | | | | | | | | .040 |
| 1620 | 151 | | | | | | | | | | .063 |
| 1640 | 040 | | | | | | | | | | .000 |
| 1700 | 068 | | | | | | | | | | .056 |
| 1720 | 040 | | | | | | | | | | .230 |
| 1740 | 136 | | | | | | | | | | .193 |
| 1800 | | | | | | | | | | | .121 |
| 1820 | 233 | | | | | | | | | | .015 |
| 1840 | 184 | | | | | | | | | | .074 |
| 1900 | 186 | | | | | | | | | | .000 |
| 1920 | | | | | | | | | | | .214 |
| 1940 | | | | | | | | | | | .111 |
| 2000 | 147 | | | | | | | | | | .000 |
| 2020 | 164 | | | | | | | | | | .066 |
| 2040 | 160 | | | | | | | | | | .080 |
| | | | | | | | | | | | .027 |

TABLE A.16 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGL BKGD DAY |
|------|-----|---------------------|--|--------------------|--|---------|---------|-----|-----------|--------------|----------------|
| 2100 | 161 | | | | | | | 096 | 000 | .074 | .592 |
| 2120 | 160 | | | | | | | 098 | .081 | .083 | .062 |
| 2140 | 158 | | | | | | | 101 | .070 | .133 | .056 |
| 2200 | 200 | | | | | | | 115 | 000 | .173 | .290 |
| 2240 | 201 | | | | | | | 103 | 000 | | .000 |
| 2300 | 174 | | | 179-161 | | | | 100 | .277 | | .000 |
| 2340 | | | | | | | | 099 | 000 | .035 | .101 |
| 0000 | 173 | | | | | | | | | | .000 |
| 0020 | 166 | | | | | | | 093 | 000 | .088 | .000 |
| 0040 | 217 | | | | | | | 090 | 000 | .100 | .000 |
| 0100 | 209 | | | 177-173 | | | | 073 | .028 | .137 | .133 |
| 0120 | 216 | | | | | | | 067 | 000 | .089 | .071 |
| 0140 | 222 | | | | | | | 070 | 000 | .054 | .019 |
| 0200 | 245 | | | | | | | 073 | 000 | .042 | .023 |
| 0220 | 260 | | | 184-159 | | 140-113 | 100-080 | 063 | 000 | .057 | .000 |
| 0240 | | | | | | | | 073 | .385 | .106 | .089 |
| 0300 | 230 | | | | | | | 062 | 000 | .061 | .045 |
| 0320 | 222 | | | | | | | 062 | .125 | .041 | .031 |
| 0340 | 266 | | | | | | | 053 | .056 | .000 | .000 |
| 0400 | 266 | | | | | | | 063 | .148 | .046 | .000 |
| 0420 | 266 | | | 194-179 194-182 | | 164-148 | 131-080 | 068 | .399 | .038 | .000 |
| 0440 | | | | | | | | | | | .000 |
| 0500 | 296 | | | | | | | 053 | .095 | .046 | .000 |
| 0520 | 297 | | | 200-191 | | 179-170 | 109-104 | 040 | .058 | .011 | .023 |
| 0540 | 304 | | | 266-251 | | 199-189 | | 040 | .057 | .083 | .040 |
| 0600 | 295 | | | | | | | 040 | .063 | .000 | .000 |
| 0620 | 294 | | | 196-180 | | 199-160 | 102-095 | 040 | .181 | .121 | .121 |
| 0640 | 303 | | | 203-187 | | | | 040 | .160 | .184 | .058 |
| 0700 | | | | | | | | | | | .000 |
| 0720 | 296 | | | 250-218 | | 200-154 | 148-137 | 040 | .348 | .098 | .000 |
| 0740 | 249 | | | 208-172 | | 198-156 | | 040 | .172 | .118 | .000 |
| 0800 | 234 | | | | | | | 040 | .216 | .339 | .068 |
| 0820 | | | | | | | | | | | .000 |
| 0840 | 271 | | | 236-213 | | | | 040 | .100 | .106 | .260 |

TABLE A.17 ROI-NAMUR TO PALO ALTO, STAR FISH

0900 GMT 9 JULY

| TIME | MOF | GAPS IN HF SPECTRUM | | | | LOF | EVENT DAY | 8KGD AVERAGE | SINGLE 8KGD DAY |
|------|-----|---------------------|--|--|---------|-----|-----------|--------------|-----------------|
| 0900 | 146 | | | | | | | .142 | |
| 0920 | 075 | | | | | 053 | .043 | .000 | |
| 0940 | | | | | | 041 | .000 | .000 | |
| 1000 | | | | | | | | .065 | |
| 1020 | | | | | | | | .000 | |
| 1040 | 076 | | | | | 040 | .000 | .000 | |
| 1100 | 066 | | | | | 042 | .000 | .197 | |
| 1120 | 077 | | | | | 044 | .000 | .000 | |
| 1140 | 209 | | | | | 042 | .395 | .262 | |
| 1200 | 223 | 161-132 | | | | 043 | .372 | .083 | |
| 1220 | 211 | 161-135 | | | | 042 | .343 | .086 | |
| 1240 | 132 | | | | 066-061 | 042 | .100 | .111 | |
| 1300 | 091 | | | | 062-060 | 044 | .106 | .000 | |
| 1320 | 098 | | | | 064-061 | 041 | .000 | .000 | |
| 1340 | 124 | | | | 102-078 | 041 | .000 | .000 | |
| 1400 | 129 | | | | 109-102 | 042 | .000 | .000 | |
| 1420 | 125 | | | | 080-078 | 042 | .000 | .000 | |
| 1440 | | | | | 063-060 | 049 | .000 | .000 | |
| 1500 | | | | | | | | .000 | |
| 1520 | 131 | | | | | 061 | .000 | .000 | |
| 1540 | | | | | | | | .000 | |
| 1600 | 134 | | | | | 084 | .000 | .000 | |
| 1620 | | | | | | | | .000 | |
| 1640 | | | | | | | | .000 | |
| 1700 | | | | | | | | .000 | |
| 1720 | | | | | | | | .000 | |
| 1740 | | | | | | | | .000 | |
| 1800 | | | | | | | | .000 | |
| 1820 | | | | | | | | .000 | |
| 1840 | 132 | | | | | 122 | .000 | .000 | |
| 1900 | 193 | | | | | 129 | .000 | .000 | |
| 1920 | 156 | | | | | 141 | .000 | .000 | |
| 1940 | 193 | | | | | 126 | .000 | .000 | |
| 2000 | | | | | | | | .000 | |
| 2020 | | | | | | | | .000 | |
| 2040 | | | | | | | | .000 | |

TABLE A.17 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|-----|------|-----------|--------------|-----------------|
| 2100 | 237 | 201-159 | | | | | 149 | .477 | .195 | .000 | |
| 2120 | | | | | | | | | | | |
| 2140 | | | | | | | | | | | |
| 2200 | | | | | | | | | | | |
| 2220 | | | | | | | | | | | |
| 2240 | | | | | | | | | | | |
| 2300 | | | | | | | | | | | |
| 2320 | | | | | | | | | | | |
| 2340 | | | | | | | | | | | |
| 0000 | | | | | | | | | | | |
| 0020 | | | | | | | | | | | |
| 0040 | | | | | | | | | | | |
| 0100 | | | | | | | | | | | |
| 0120 | | | | | | | | | | | |
| 0140 | | | | | | | | | | | |
| 0200 | | | | | | | | | | | |
| 0220 | | | | | | | | | | | |
| 0240 | | | | | | | | | | | |
| 0300 | | 144-134 | | | | | | | | | |
| 0320 | | | | | | | | | | | |
| 0340 | | | | | | | | | | | |
| 0400 | | | | | | | | | | | |
| 0420 | | | | | | | | | | | |
| 0440 | | | | | | | | | | | |
| 0500 | | | | | | | | | | | |
| 0520 | | | | | | | | | | | |
| 0540 | | | | | | | | | | | |
| 0600 | | | | | | | | | | | 165-130 |
| 0620 | | | | | | | | | | | |
| 0640 | | | | | | | | | | | |
| 0700 | | | | | | | | | | | |
| 0720 | | | | | | | | | | | |
| 0740 | | | | | | | | | | | |
| 0800 | | | | | | | | | | | |
| 0820 | | | | | | | | | | | |
| 0840 | | | | | | | | | | | |
| 0900 | | | | | | | | | | | |
| 0920 | | | | | | | | | | | |
| 0940 | | | | | | | | | | | |
| 1000 | | | | | | | | | | | |
| 1020 | | | | | | | | | | | |
| 1040 | | | | | | | | | | | |
| 1100 | | | | | | | | | | | |
| 1120 | | | | | | | | | | | |
| 1140 | | | | | | | | | | | |
| 1200 | | | | | | | | | | | |

TABLE A.18 OKINAWA TO HAWAII, STAR FISH

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|---------|---------|--|-----|-----------|--------------|-----------------|
| | | | | | | | | | | | |
| 0900 | | | | | | | | | | .000 | |
| 0920 | | | | | | | | | | .333 | |
| 0940 | | | | | | | | | | .211 | |
| 1000 | | | | | | | | | | .000 | |
| 1020 | 040 | | | | | | | 040 | | .000 | |
| 1040 | 182 | | | | | | | 083 | | .000 | |
| 1100 | 144 | | | | | | | 104 | | .000 | |
| 1120 | | | | | | | | | | .000 | |
| 1140 | 130 | | | 126-117 | 102-087 | 083-077 | | 074 | | .320 | |
| 1200 | | | | | | | | | | .000 | |
| 1220 | | | | | | | | | | .000 | |
| 1240 | | | | | | | | | | .000 | |
| 1300 | | | | | | | | | | .000 | |
| 1320 | | | | | | | | | | .269 | |
| 1340 | | | | | | | | | | .438 | |
| 1400 | | | | | | | | | | .000 | |
| 1420 | | | | | | | | | | .000 | |
| 1440 | | | | | | | | | | .354 | |
| 1500 | 040 | | | | | | | 040 | | .181 | |
| 1520 | 117 | | | 108-096 | 080-070 | 064-061 | | 053 | | .250 | |
| 1540 | | | | | | | | | | .273 | |
| 1600 | 071 | | | | | | | 052 | | .141 | |
| 1620 | | | | | | | | | | .076 | |
| 1640 | | | | | | | | | | .120 | |
| 1700 | 110 | | | 080-075 | 071-069 | 064-069 | | 054 | | .111 | |
| 1720 | 136 | | | | | | | 054 | | .048 | |
| 1740 | 154 | | | | | | | 052 | | .095 | |
| 1800 | | | | | | | | 082 | | .104 | |
| 1820 | 128 | | | 120-112 | | | | | | .041 | |
| 1840 | 113 | | | | | | | 101 | | .107 | |
| 1900 | 110 | | | 095-086 | | | | 083 | | .197 | |
| 1920 | 105 | | | | | | | 080 | | .110 | |
| 1940 | | | | | | | | 092 | | .104 | |
| 2000 | 150 | | | 093-087 | | | | | | .000 | |
| 2020 | 154 | | | | | | | 083 | | .019 | |
| 2040 | | | | | | | | 084 | | .000 | |
| | | | | | | | | | | .102 | |
| | | | | | | | | | | .000 | |
| | | | | | | | | | | .046 | |

0900 GRET 9 JULY

TABLE A.18 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|--|--|--|---------|-----|-----------|--------------|-----------------|
| 2100 | 182 | | | | | | | 115 | 000 | .000 | .000 |
| 2120 | 194 | | | | | | | 105 | 000 | .000 | .000 |
| 2140 | 195 | | | | | | | 104 | 000 | .000 | .000 |
| 2200 | 179 | | | | | | | 119 | 000 | .000 | .000 |
| 2220 | 220 | | | | | | | 156 | 000 | .000 | .000 |
| 2240 | 221 | | | | | | | 145 | .053 | .000 | .000 |
| 2300 | | | 153-149 | | | | | | | | .244 |
| 2320 | | | | | | | | | | | .275 |
| 2340 | | | | | | | | | | | .267 |
| 0020 | | | | | | | | | | | .208 |
| 0040 | | | | | | | | | | | .000 |
| 0100 | | | | | | | | | | | .137 |
| 0120 | 175 | | | | | | | 126 | .122 | .144 | .144 |
| 0140 | 189 | | 148-142 | | | | | 131 | 000 | .054 | .108 |
| 0200 | 216 | | 192-184 | | | | 116-110 | 097 | .118 | .159 | .318 |
| 0220 | 221 | | | | | | | 120 | 000 | .152 | .152 |
| 0240 | 242 | | 205-183 | | | | 164-151 | 096 | .240 | .050 | .100 |
| 0300 | 246 | | | | | | 176-164 | 164 | 000 | .000 | .000 |
| 0320 | 239 | | 196-189 | | | | 152-142 | 126 | .257 | .008 | .000 |
| 0340 | 270 | | 202-186 | | | | | 153 | .137 | .000 | .000 |
| 0400 | 278 | | 202-186 | | | | | 121 | .102 | .034 | .068 |
| 0420 | 234 | | 194-186 | | | | | 149 | .188 | .131 | .161 |
| 0440 | 262 | | 174-147 | | | | | 143 | .227 | .045 | .000 |
| 0500 | 270 | | 197-186 | | | | | 166 | .106 | .000 | .000 |
| 0520 | 262 | | 169-154 | | | | | 127 | .163 | .000 | .000 |
| 0540 | 271 | | 160-155 | | | | | 115 | .083 | .000 | .000 |
| 0600 | 277 | | | | | | | 163 | .000 | .000 | .000 |
| 0620 | 240 | | 158-156 | | | | | 123 | .103 | .122 | .209 |
| 0640 | 222 | | 159-145 | | | | | 121 | .356 | .258 | .000 |
| 0700 | 214 | | 160-150 | | | | 141-131 | 121 | .108 | .312 | .000 |
| 0720 | 221 | | 161-155 | | | | 138-133 | 100 | .050 | .144 | .000 |
| 0740 | 223 | | | | | | | 097 | 000 | .250 | .420 |
| 0800 | 217 | | | | | | 099-093 | 083 | .045 | .108 | .000 |
| 0820 | 220 | | | | | | 121-117 | 098 | .033 | .126 | .000 |
| 0840 | 234 | | | | | | 101-095 | 081 | .039 | .000 | .000 |

TABLE A.19 CANTON TO PALO ALTO, STAR FISH

| | | 0900 OCT 9 JUL72 | | | | | |
|------|-----|---------------------|--|---------|-----------|--------------|-----------------|
| TIME | MOF | GAPS IN HF SPECTRUM | | | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
| 0900 | 219 | | | | 042 | .000 | .000 |
| 0920 | 181 | | | | 043 | .095 | .069 |
| 0940 | 077 | | | | 051 | .096 | .144 |
| 1000 | 077 | | | | 046 | .044 | .131 |
| 1020 | | | | | | | .197 |
| 1040 | | | | | | | .362 |
| 1100 | 040 | | | | 040 | .097 | .079 |
| 1120 | | | | | | | .192 |
| 1140 | 200 | | | | 042 | .091 | .182 |
| 1200 | 190 | | | | 040 | .045 | .090 |
| 1220 | 077 | | | | 043 | .037 | .037 |
| 1240 | 110 | | | | 041 | .058 | .000 |
| 1300 | 207 | | | | 041 | .007 | .021 |
| 1320 | 202 | | | | 039 | .000 | .000 |
| 1340 | 188 | | | | 041 | .000 | .000 |
| 1400 | 191 | | | 158-138 | 044 | .040 | .119 |
| 1420 | 161 | | | 158-138 | 047 | .000 | .000 |
| 1440 | | | | | | | .000 |
| 1500 | 160 | | | | | | .208 |
| 1520 | 134 | | | | 065 | .000 | .000 |
| 1540 | 040 | | | | 071 | .078 | .233 |
| 1600 | | | | | 040 | .234 | .701 |
| 1620 | | | | | | | .001 |
| 1640 | 130 | | | | 071 | .000 | .000 |
| 1700 | 202 | | | | 117 | .000 | .000 |
| 1720 | 205 | | | | 117 | .000 | .000 |
| 1740 | 220 | | | | 161 | .000 | .000 |
| 1800 | 210 | | | | 143 | .000 | .000 |
| 1820 | 173 | | | | 121 | .000 | .000 |
| 1840 | 189 | | | | 143 | .000 | .000 |
| 1900 | 194 | | | | 123 | .032 | .096 |
| 1920 | 196 | | | | 123 | .100 | .299 |
| 1940 | | | | | | | .000 |
| 2000 | | | | | | | .316 |
| 2020 | | | | | | | .341 |
| 2040 | | | | | | | .474 |

TABLE A.19 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|---------|--|--|--|-----|-----------|--------------|-----------------|
| 2100 | | | | | | | | | | | .000 | .000 |
| 2120 | | | | | | | | | | | .000 | .000 |
| 2140 | | | | | | | | | | | .143 | .143 |
| 2200 | | | | | | | | | | | .173 | .173 |
| 2220 | | | | | | | | | | | .000 | .000 |
| 2240 | | | | | | | | | | | .000 | .000 |
| 2300 | | | | | | | | | | | .116 | .116 |
| 2320 | | | | | | | | | | | .149 | .149 |
| 2340 | | | | | | | | | | | .000 | .000 |
| 0000 | | | | | | | | | | | .000 | .000 |
| 0020 | 294 | | | 279-239 | | | | | 139 | .258 | .083 | .233 |
| 0040 | 305 | | | 263-236 | | | | | 107 | .136 | .135 | .166 |
| 0100 | 301 | | | 270-230 | 180-167 | | | | 117 | .288 | .093 | .403 |
| 0120 | 312 | | | | | | | | 131 | .000 | .000 | .186 |
| 0140 | 239 | | | | | | | | 096 | .000 | .000 | .000 |
| 0200 | | | | | | | | | | .000 | .000 | .000 |
| 0220 | 264 | | | | | | | | 100 | .000 | .000 | .000 |
| 0240 | 275 | | | | | | | | 100 | .000 | .000 | .000 |
| 0300 | 287 | | | | | | | | 098 | .037 | .000 | .000 |
| 0320 | | | | | | | | | | .000 | .000 | .000 |
| 0340 | 206 | | | | | | | | 094 | .000 | .008 | .000 |
| 0400 | 250 | | | | | | | | 100 | .000 | .000 | .000 |
| 0420 | 212 | | | | | | | | 097 | .000 | .011 | .000 |
| 0440 | 236 | | | | | | | | 092 | .000 | .000 | .000 |
| 0500 | 233 | | | | | | | | 070 | .000 | .000 | .000 |
| 0520 | 253 | | | | | | | | 056 | .000 | .020 | .000 |
| 0540 | 222 | | | | | | | | 046 | .000 | .000 | .000 |
| 0600 | 215 | | | | | | | | 040 | .000 | .000 | .000 |
| 0620 | 152 | | | | | | | | 040 | .000 | .000 | .000 |
| 0640 | 190 | | | | | | | | 040 | .000 | .000 | .000 |
| 0700 | 186 | | | | | | | | 040 | .000 | .000 | .000 |
| 0720 | 155 | | | | | | | | 040 | .000 | .000 | .000 |
| 0740 | 190 | | | | | | | | 040 | .000 | .000 | .000 |
| 0800 | 198 | | | | | | | | 040 | .000 | .000 | .000 |
| 0820 | 198 | | | | | | | | 040 | .000 | .000 | .000 |
| 0840 | 201 | | | | | | | | 040 | .000 | .000 | .000 |

TABLE A.20 KAUAI TO FAIRBANKS, STAR FISH

0900 GMT 9 JULY

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|---------|--|-----|-----------|--------------|-----------------|
| 0900 | 158 | | | | | | | 040 | 000 | .000 | .000 |
| 0920 | 117 | | | | | | | 054 | 000 | .000 | .000 |
| 0940 | 125 | | | | | | | 055 | 000 | .000 | .000 |
| 1000 | 145 | | | | | | | 045 | 000 | .000 | .000 |
| 1020 | 159 | | | | | | | 041 | 000 | .000 | .000 |
| 1040 | 159 | | | | | | | 040 | 000 | .000 | .000 |
| 1100 | 161 | | | | | | | 041 | .042 | .000 | .000 |
| 1120 | 146 | | | | | | | 042 | .067 | .000 | .000 |
| 1140 | 122 | | | | | | | 043 | .000 | .000 | .000 |
| 1200 | 120 | | | | | | | 042 | .000 | .073 | .000 |
| 1220 | 131 | | | | | | | 041 | .000 | .000 | .000 |
| 1240 | 110 | | | | | | | 041 | .101 | .000 | .000 |
| 1300 | 098 | | | | | | | 040 | .000 | .000 | .000 |
| 1320 | 099 | | | | | | | 041 | .000 | .000 | .000 |
| 1340 | 093 | | | | | | | 040 | .000 | .000 | .000 |
| 1400 | 091 | | | | | | | 050 | .000 | .022 | .044 |
| 1420 | 100 | | | | | | | 046 | .000 | .043 | .086 |
| 1440 | 088 | | | | | | | 045 | .000 | .000 | .000 |
| 1500 | 097 | | | | | | | 052 | .000 | .000 | .000 |
| 1520 | 083 | | | | | | | 063 | .000 | .000 | .000 |
| 1540 | | | | | | | | | | | |
| 1600 | 158 | | | | | | | 072 | .000 | .000 | .000 |
| 1620 | 133 | | | | | | | 105 | .000 | .000 | .000 |
| 1640 | | | | | | | | | | | |
| 1700 | 172 | | | | | | | 092 | .150 | .000 | .000 |
| 1720 | 153 | | | | | 125-113 | | 123 | .000 | .000 | .000 |
| 1740 | 106 | | | | | | | 094 | .000 | .000 | .000 |
| 1800 | 154 | | | | | | | 082 | .194 | .000 | .000 |
| 1820 | 133 | | | | | 137-123 | | 098 | .000 | .000 | .000 |
| 1840 | | | | | | | | | | | |
| 1900 | 151 | | | | | | | 094 | .000 | .000 | .000 |
| 1920 | | | | | | | | | | | |
| 1940 | 153 | | | | | | | 101 | .000 | .000 | .000 |
| 2000 | 127 | | | | | | | 095 | .000 | .000 | .000 |
| 2020 | 160 | | | | | | | 122 | .000 | .000 | .000 |
| 2040 | | | | | | | | | | | |

TABLE A.20 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 2100 | | | | | | | | | | | | .000 |
| 2120 | | | | | | | | | | | | .000 |
| 2140 | | | | | | | | | | | | .000 |
| 2200 | 145 | | | | | | | | 116 | 000 | .000 | .000 |
| 2220 | 165 | | | | | | | | 126 | 000 | .000 | .000 |
| 2240 | | | | | | | | | | | | .000 |
| 2300 | | | | | | | | | | | | .000 |
| 2320 | 160 | | | | | | | | 125 | 000 | .000 | .000 |
| 2340 | | | | | | | | | | | | .000 |
| 0000 | | | | | | | | | | | | .000 |
| 0020 | | | | | | | | | | | | .000 |
| 0040 | | | | | | | | | | | | .000 |
| 0100 | 150 | | | | | | | | 123 | 000 | .000 | .000 |
| 0120 | | | | | | | | | | | | .000 |
| 0140 | | | | | | | | | | | | .000 |
| 0200 | | | | | | | | | | | | .000 |
| 0220 | | | | | | | | | | | | .000 |
| 0240 | 176 | | | | | | | | 131 | 000 | .000 | .000 |
| 0300 | | | | | | | | | | | | .000 |
| 0320 | | | | | | | | | | | | .056 |
| 0340 | | | | | | | | | | | | .000 |
| 0400 | | | | | | | | | | | | .000 |
| 0420 | 172 | | | | | | | | 122 | 000 | .000 | .000 |
| 0440 | 159 | | | | | | | | 128 | 000 | .000 | .000 |
| 0500 | 185 | | | | | | | | 133 | 000 | .000 | .000 |
| 0520 | 158 | | | | | | | | 126 | 000 | .000 | .000 |
| 0540 | | | | | | | | | | | | .000 |
| 0600 | | | | | | | | | | | | .000 |
| 0620 | | | | | | | | | | | | .000 |
| 0640 | 185 | | | | | | | | 041 | 000 | .013 | .027 |
| 0700 | 158 | | | | | | | | 041 | 000 | .009 | .018 |
| 0720 | 178 | | | | | | | | 040 | 000 | .013 | .026 |
| 0740 | 191 | | | | | | | | 041 | 000 | .026 | .053 |
| 0800 | 189 | | | | | | | | 040 | 000 | .000 | .000 |
| 0820 | 182 | | | | | | | | 041 | 000 | .000 | .000 |
| 0840 | 157 | | | | | | | | 040 | 000 | .000 | .000 |

TABLE A.21 KAUAI TO RAROTONGA, STAR FISH

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| | | | | | | | | | | | |
| 0900 | 040 | | | | | | | 040 | B | .242 | .078 |
| 0920 | 153 | | | | | | | 052 | .436 | .205 | .071 |
| 0940 | | | | | | | | | | | .128 |
| 1000 | | | | | | | | | | | .115 |
| 1020 | | | | | | | | | | | .135 |
| 1040 | | | | | | | | | | | .162 |
| 1100 | 133 | | | | | | | 065 | .809 | .258 | .000 |
| 1120 | | | | | | | | | | | .000 |
| 1140 | | | | | | | | | | | .000 |
| 1200 | | | | | | | | | | | .142 |
| 1220 | | | | | | | | | | | .000 |
| 1240 | | | | | | | | | | | .000 |
| 1300 | | | | | | | | | | | .024 |
| 1320 | | | | | | | | | | | .020 |
| 1340 | | | | | | | | | | | .037 |
| 1400 | | | | | | | | | | | .065 |
| 1420 | | | | | | | | | | | .059 |
| 1440 | | | | | | | | | | | .117 |
| 1500 | | | | | | | | | | | .040 |
| 1520 | 131 | | | | | | | 041 | .400 | .256 | .075 |
| 1540 | 112 | | | | | | | 041 | .338 | .386 | .000 |
| 1600 | | | | | | | | | | | .164 |
| 1620 | 070 | | | | | | | 047 | .217 | .231 | .000 |
| 1640 | 112 | | | | | | | 076 | .611 | .340 | .340 |
| 1700 | | | | | | | | | | | .703 |
| 1720 | | | | | | | | | | | .001 |
| 1740 | | | | | | | | | | | .000 |
| 1800 | | | | | | | | | | | .000 |
| 1820 | | | | | | | | | | | .000 |
| 1840 | | | | | | | | | | | .000 |
| 1900 | | | | | | | | | | | .623 |
| 1920 | | | | | | | | | | | .532 |
| 1940 | | | | | | | | | | | .001 |
| 2000 | | | | | | | | | | | .000 |
| 2020 | | | | | | | | | | | .692 |
| 2040 | | | | | | | | | | | .001 |
| | | | | | | | | | | | .531 |

0900 GMT 9 JULY

TABLE A.21 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|---------|--|--|--|-----|-----------|--------------|-----------------|
| 2100 | | | | | | | | | | | .001 | |
| 2120 | | | | | | | | | | | .717 | |
| 2140 | | | | | | | | | | | .277 | |
| 2200 | | | | | | | | | | | .244 | |
| 2220 | | | | | | | | | | | .150 | |
| 2240 | | | | | | | | | | | .306 | |
| 2300 | | | | | | | | | | | .000 | |
| 2320 | 159 | 153-133 | | | | | | | 124 | .571 | .525 | |
| 2340 | 161 | | | | | | | | 150 | .000 | | |
| 0000 | 156 | 151-138 | | | 126-106 | | | | 104 | .635 | .001 | |
| 0020 | | | | | | | | | | | .000 | |
| 0040 | | | | | | | | | | | .000 | |
| 0100 | 157 | | | | | | | | | | .000 | |
| 0120 | 181 | | | | | | | | | | .000 | |
| 0140 | 220 | | | | | | | | | | .000 | |
| 0200 | 177 | 148-142 | | | | | | | | | .726 | |
| 0220 | 179 | 161-142 | | | | | | | | .068 | .464 | |
| 0240 | | 149-143 | | | | | | | | .432 | | |
| 0300 | 321 | 272-189 | | | | | | | | .128 | .000 | |
| 0320 | 188 | 155-142 | | | 133-119 | | | | | .597 | .000 | |
| 0340 | 191 | | | | | | | | | .380 | .000 | |
| 0400 | 141 | | | | | | | | | .679 | .699 | |
| 0420 | | | | | | | | | | .000 | .000 | |
| 0440 | 282 | 269-193 | | | | | | | | .000 | .000 | |
| 0500 | 162 | | | | | | | | | .511 | .486 | |
| 0520 | 249 | 140-130 | | 119-112 | | | | | | .222 | .676 | |
| 0540 | | | | | | | | | | .447 | .885 | |
| 0600 | 173 | | | | | | | | | .000 | .000 | |
| 0620 | 131 | | | | | | | | | .000 | .000 | |
| 0640 | | | | | | | | | | .000 | .000 | |
| 0700 | | | | | | | | | | .000 | .000 | |
| 0720 | 310 | | | | | | | | | .000 | .000 | |
| 0740 | 182 | 304-277 | | 143-131 | | | | | | .560 | .000 | |
| 0800 | 148 | | | | | | | | | .000 | .000 | |
| 0820 | 186 | | | | | | | | | .084 | .000 | |
| 0840 | 142 | | | | | | | | | .118 | .000 | |
| | | | | | | | | | | .059 | .000 | |
| | | | | | | | | | | .354 | .000 | |
| | | | | | | | | | | .167 | .000 | |
| | | | | | | | | | | .252 | .000 | |

TABLE A.22 ROI-NAMUR TO WAKE, STAR FISH

| 0900 GMT 9 JULY | | | | | | |
|-----------------|-----|---------------------|-----|-----------|--------------|-----------------|
| TIME | MOF | GAPS IN HF SPECTRUM | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
| 0900 | | | | | | .000 |
| 0920 | 139 | | 040 | 000 | .066 | .000 |
| 0940 | 108 | | 042 | 000 | .060 | .000 |
| 1000 | 094 | | 040 | 000 | .182 | .234 |
| 1020 | 092 | | 040 | 000 | .122 | .237 |
| 1040 | 095 | | 041 | 000 | .083 | .127 |
| 1100 | 089 | | 045 | 000 | .009 | .000 |
| 1120 | 083 | | 044 | 000 | .017 | .000 |
| 1140 | 139 | 104-099 | 040 | .051 | .000 | .000 |
| 1200 | 132 | 115-110 | 040 | .054 | .014 | .000 |
| 1220 | 130 | | 040 | 000 | .012 | .024 |
| 1240 | 139 | 104-099 | 040 | .051 | .000 | .000 |
| 1300 | 120 | | 040 | 000 | .000 | .000 |
| 1320 | 211 | | 040 | 000 | .000 | .000 |
| 1340 | 116 | | 040 | 000 | .000 | .000 |
| 1400 | 197 | | 040 | 000 | .024 | .049 |
| 1420 | 114 | | 040 | .057 | .077 | .230 |
| 1440 | 110 | | 040 | 000 | .137 | .177 |
| 1500 | 121 | | 040 | .086 | .071 | .143 |
| 1520 | 106 | | 040 | 000 | .231 | .385 |
| 1540 | 141 | | 040 | 000 | .109 | .328 |
| 1600 | 160 | 128-109 | 040 | .188 | .029 | .000 |
| 1620 | 186 | | 040 | 000 | .000 | .000 |
| 1640 | 236 | | 040 | 000 | .127 | .000 |
| 1700 | 166 | | 040 | 000 | .035 | .000 |
| 1720 | 151 | | 040 | 000 | .180 | .000 |
| 1740 | 116 | | 040 | .369 | .000 | .000 |
| 1800 | 121 | 139-103 110-091 | 041 | .253 | .000 | .000 |
| 1820 | 143 | | 040 | 000 | .000 | .000 |
| 1840 | | | 041 | 000 | .011 | .033 |
| 1900 | 116 | | 040 | 000 | .000 | .000 |
| 1920 | 187 | 173-150 | 040 | .156 | .000 | .000 |
| 1940 | 195 | | 040 | 000 | .000 | .000 |
| 2000 | 187 | 177-157 | 040 | .136 | .000 | .000 |
| 2020 | 133 | | 039 | 000 | .141 | .000 |
| 2040 | | | | | | .000 |

TABLE A.22 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--------------------|--|--|-----|-----------|--------------|-----------------|
| 2100 | 197 | | | | | | 040 | 000 | .000 | |
| 2120 | 128 | | | | | | 040 | 000 | .000 | |
| 2140 | 119 | | | | | | 040 | 000 | .000 | |
| 2200 | 147 | | | | | | 040 | 000 | .000 | |
| 2220 | | | | | | | | | | |
| 2240 | 195 | | | | | | 040 | 000 | .080 | |
| 2300 | 204 | | | 173-165 | | | 040 | 000 | .000 | |
| 2320 | 195 | | | | | | 040 | .052 | .000 | |
| 2340 | 156 | | | | | | 041 | 000 | .011 | |
| 0000 | | | | | | | | | .000 | |
| 0020 | | | | | | | | | .000 | |
| 0040 | | | | | | | | | .000 | |
| 0100 | | | | | | | | | .000 | |
| 0120 | | | | | | | | | .000 | |
| 0140 | 178 | | | 170-162 | | | 040 | .058 | .000 | |
| 0200 | 231 | | | | | | 040 | 000 | .000 | |
| 0220 | 306 | | | | | | 040 | .030 | .000 | |
| 0240 | 278 | | | 291-283 259-251 | | | 040 | .034 | .000 | |
| 0300 | | | | | | | | | .000 | |
| 0320 | 280 | | | | | | 040 | 000 | .000 | |
| 0340 | 382 | | | | | | 040 | 000 | .000 | |
| 0400 | 382 | | | | | | 040 | 000 | .000 | |
| 0420 | 321 | | | | | | 041 | 000 | .000 | |
| 0440 | 302 | | | | | | 040 | 000 | .000 | |
| 0500 | 322 | | | | | | 040 | 000 | .000 | |
| 0520 | 282 | | | | | | 040 | 000 | .000 | |
| 0540 | 210 | | | | | | 040 | 000 | .000 | |
| 0600 | 180 | | | | | | 040 | 000 | .000 | |
| 0620 | 147 | | | | | | 040 | 000 | .000 | |
| 0640 | 176 | | | | | | 041 | 000 | .000 | |
| 0700 | 148 | | | | | | 040 | 000 | .078 | |
| 0720 | 176 | | | | | | 040 | 000 | .000 | |
| 0740 | | | | | | | | | .000 | |
| 0800 | 258 | | | | | | 041 | 000 | .026 | |
| 0820 | 233 | | | | | | 041 | 000 | .017 | |
| 0840 | 297 | | | | | | 041 | 000 | .056 | |

TABLE A.23 ROI-NAMUR TO FAIRBANKS, STAR FISH

0900 GMT 9 JULY

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0900 | 235 | | | | | | | 165 | 000 | .000 | .000 |
| 0920 | 163 | | | | | | | 050 | 000 | .000 | .000 |
| 0940 | 095 | | | | | | | 040 | 000 | .000 | .000 |
| 1000 | 112 | | | | | | | 045 | 000 | .000 | .000 |
| 1020 | 161 | | | | | | | 040 | 000 | .000 | .000 |
| 1040 | 179 | | | | | | | 040 | 000 | .000 | .000 |
| 1100 | 151 | | | | | | | 040 | 000 | .000 | .000 |
| 1120 | 112 | | | | | | | 040 | 000 | .000 | .000 |
| 1140 | 113 | | | | | | | 040 | 000 | .000 | .000 |
| 1200 | 138 | | | | | | | 040 | 000 | .000 | .000 |
| 1220 | 136 | | | | | | | 040 | 000 | .000 | .000 |
| 1240 | 136 | | | | | | | 040 | 000 | .000 | .000 |
| 1300 | 140 | | | | | | | 040 | 000 | .027 | .055 |
| 1320 | 134 | | | | | | | 040 | 000 | .022 | .045 |
| 1340 | 108 | | | | | | | 040 | 000 | .000 | .000 |
| 1400 | 109 | | | | | | | 040 | 000 | .000 | .000 |
| 1420 | 105 | | | | | | | 040 | 000 | .000 | .000 |
| 1440 | 103 | | | | | | | 040 | 000 | .068 | .137 |
| 1500 | 099 | | | | | | | 040 | 000 | .000 | .000 |
| 1520 | 091 | | | | | | | 040 | 000 | .000 | .000 |
| 1540 | 140 | | | | | | | 055 | 000 | .000 | .000 |
| 1600 | 137 | | | | | | | 070 | 000 | .000 | .000 |
| 1620 | | | | | | | | | | | |
| 1640 | | | | | | | | | | | |
| 1700 | 144 | | | | | | | 060 | 000 | .000 | .000 |
| 1720 | 040 | | | | | | | 040 | B | .000 | .000 |
| 1740 | 040 | | | | | | | 040 | B | .000 | .000 |
| 1800 | 113 | | | | | | | 095 | 000 | .000 | .000 |
| 1820 | 134 | | | | | | | 101 | 000 | .000 | .000 |
| 1840 | | | | | | | | | | | |
| 1900 | 169 | | | | | | | 114 | 000 | .000 | .000 |
| 1920 | 190 | | | | | | | 128 | 000 | .000 | .000 |
| 1940 | 199 | | | | | | | 114 | 000 | .000 | .000 |
| 2000 | 200 | | | | | | | 113 | 000 | .000 | .000 |
| 2020 | 195 | | | | | | | 110 | 000 | .000 | .000 |
| 2040 | 198 | | | | | | | 067 | 000 | .000 | .000 |

TABLE A.23 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 2100 | 200 | | | | | | | 064 | 000 | .000 | .000 |
| 2120 | 183 | | | | | | | 073 | 000 | .000 | .000 |
| 2140 | 175 | | | | | | | 081 | 000 | .000 | .000 |
| 2200 | 185 | | | | | | | 066 | 000 | .000 | .000 |
| 2240 | 040 | | | | | | | 040 | B | .000 | .000 |
| 2300 | 170 | | | | | | | 068 | 000 | .000 | .000 |
| 2320 | 040 | | | | | | | 040 | B | .000 | .000 |
| 2340 | 040 | | | | | | | 040 | B | .000 | .000 |
| 0000 | | | | | | | | | | .000 | .000 |
| 0020 | 099 | | | | | | | 061 | 000 | .000 | .000 |
| 0040 | 097 | | | | | | | 062 | 000 | .000 | .000 |
| 0100 | 168 | | | | | | | 063 | 000 | .000 | .000 |
| 0120 | | | | | | | | | | .000 | .000 |
| 0140 | | | | | | | | | | .000 | .000 |
| 0200 | | | | | | | | | | .000 | .000 |
| 0220 | 040 | | | | | | | 040 | B | .000 | .000 |
| 0240 | 103 | | | | | | | 064 | 000 | .000 | .000 |
| 0300 | 040 | | | | | | | 040 | B | .000 | .000 |
| 0320 | 173 | | | | | | | 069 | 000 | .000 | .000 |
| 0340 | 040 | | | | | | | 040 | B | .000 | .000 |
| 0400 | 169 | | | | | | | 062 | 000 | .000 | .000 |
| 0420 | 198 | | | | | | | 057 | 000 | .000 | .000 |
| 0440 | 106 | | | | | | | 060 | 000 | .000 | .000 |
| 0500 | 101 | | | | | | | 057 | 000 | .000 | .000 |
| 0520 | 107 | | | | | | | 060 | 000 | .000 | .000 |
| 0540 | | | | | | | | | | .000 | .000 |
| 0600 | | | | | | | | | | .000 | .000 |
| 0620 | 040 | | | | | | | 040 | B | .000 | .000 |
| 0640 | 040 | | | | | | | 040 | B | .014 | .029 |
| 0700 | 099 | | | | | | | 057 | 000 | .019 | .037 |
| 0720 | 181 | | | | | | | 056 | 000 | .000 | .000 |
| 0740 | 102 | | | | | | | 046 | 000 | .011 | .022 |
| 0800 | 086 | | | | | | | 044 | 000 | .000 | .000 |
| 0820 | 179 | | | | | | | 051 | 000 | .000 | .000 |
| 0840 | | | | | | | | | | .000 | .000 |

TABLE A.24 KAUAI TO PALO ALTO, STAR FISH

| | | 0900 OCT 9 JULY | | | | | | | |
|------|-----|---------------------|---------|---------|---------|-----|-----------|--------------|-----------------|
| TIME | MOF | GAPS IN HF SPECTRUM | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
| 0900 | 160 | | | | | | 055 | .088 | .000 |
| 0920 | 143 | 134-130 | 112-077 | | | | 047 | .365 | .000 |
| 0940 | 078 | | | | | | 044 | .000 | .041 |
| 1000 | | | | | | | | | .000 |
| 1020 | 128 | | 104-080 | | | | 040 | .273 | .121 |
| 1100 | 077 | | | | | | 043 | .000 | .051 |
| 1120 | 094 | | 088-077 | | | | 044 | .220 | .119 |
| 1140 | 139 | 133-130 | 122-095 | 089-078 | | | 040 | .000 | .000 |
| 1200 | 076 | | | | | | 040 | .000 | .074 |
| 1220 | 078 | | | | | | 043 | .000 | .064 |
| 1240 | 130 | | 123-097 | 089-077 | | | 041 | .427 | .075 |
| 1300 | 096 | | 089-078 | | | | 041 | .200 | .000 |
| 1320 | 080 | | | | | | 041 | .000 | .000 |
| 1340 | 080 | | 077-076 | | | | 042 | .026 | .000 |
| 1400 | 085 | | 079-077 | | | | 041 | .045 | .000 |
| 1420 | 086 | | | | | | 043 | .000 | .014 |
| 1440 | | | | | | | | | .000 |
| 1500 | | | | | | | | | .000 |
| 1520 | | | | | | | | | .000 |
| 1540 | | 185-154 | 146-138 | 123-119 | | | 058 | .457 | .000 |
| 1600 | 162 | 151-135 | 115-097 | | 101-080 | | 073 | .382 | .000 |
| 1620 | | | | | | | | | .000 |
| 1640 | 195 | 179-132 | 120-102 | 087-071 | 061-060 | | 058 | .599 | .000 |
| 1700 | 105 | | 097-079 | 077-060 | | | 058 | .745 | .000 |
| 1720 | 123 | | 113-101 | 093-073 | 067-055 | | 053 | .629 | .000 |
| 1740 | | | | | | | | | .000 |
| 1800 | 133 | | | | | | 116 | .000 | .000 |
| 1820 | 134 | | | | | | 115 | .000 | .000 |
| 1840 | 180 | | | | | | 151 | .000 | .000 |
| 1900 | 154 | | | | | | 117 | .000 | .000 |
| 1920 | 132 | | | | | | 117 | .000 | .000 |
| 1940 | 156 | | | | | | 112 | .000 | .000 |
| 2000 | 146 | | | | | | 117 | .000 | .000 |
| 2020 | 193 | 174-156 | | | | | 121 | .000 | .000 |
| 2040 | 129 | | | | | | 122 | .254 | .000 |
| | | | | | | | 105 | .000 | .000 |

TABLE A.24 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|------|---------------------|--|---------|--|---------|--|-----|-----------|--------------|-----------------|
| 2100 | 131 | | | | | | | 121 | 000 | .000 | .000 |
| 2120 | 160 | | | | | | | 127 | .212 | .156 | .000 |
| 2140 | 161 | | | | | | | 150 | 000 | .000 | .000 |
| 2220 | 132 | | | | | | | 127 | 000 | .046 | .000 |
| 2240 | 154 | | | | | | | 117 | .622 | .000 | .000 |
| 2300 | 160 | | | | | 149-126 | | 102 | .293 | .000 | .000 |
| 2320 | 250 | | | 152-135 | | | | 141 | .743 | .752 | .000 |
| 2340 | 184 | | | 241-160 | | | | 122 | 000 | .000 | .000 |
| 0000 | 287 | | | 273-154 | | | | 121 | .717 | .358 | .000 |
| 0020 | 295 | | | 284-160 | | | | 121 | .713 | .000 | .000 |
| 0040 | 160 | | | 141-134 | | | | 121 | .179 | .000 | .000 |
| 0100 | 0100 | | | | | | | | | .000 | .000 |
| 0120 | 0120 | | | | | | | | | .000 | .000 |
| 0140 | 154 | | | | | | | | | .000 | .000 |
| 0200 | 160 | | | | | 145-128 | | 117 | .459 | .000 | .000 |
| 0220 | 160 | | | 149-130 | | 141-128 | | 117 | .302 | .013 | .040 |
| 0240 | 160 | | | 141-134 | | | | 115 | .422 | .006 | .017 |
| 0300 | 160 | | | | | | | 119 | .171 | .000 | .000 |
| 0320 | 163 | | | | | 112-100 | | 092 | .185 | .000 | .000 |
| 0340 | 161 | | | 143-134 | | 101-079 | | 074 | .348 | .011 | .033 |
| 0400 | 160 | | | 143-132 | | | | 070 | .121 | .000 | .000 |
| 0420 | 183 | | | | | | | 065 | 000 | .011 | .032 |
| 0440 | 171 | | | | | 087-080 | | 070 | .062 | .034 | .000 |
| 0500 | 0500 | | | | | | | 057 | 000 | .031 | .000 |
| 0520 | 187 | | | | | | | 048 | 000 | .000 | .000 |
| 0540 | 172 | | | | | 102-094 | | 047 | .064 | .000 | .000 |
| 0600 | 159 | | | | | | | 040 | 000 | .000 | .000 |
| 0620 | 157 | | | | | 102-095 | | 040 | .060 | .000 | .000 |
| 0640 | 130 | | | | | | | 041 | 000 | .000 | .000 |
| 0700 | 140 | | | | | | | 040 | 000 | .010 | .000 |
| 0720 | 135 | | | | | | | 042 | 000 | .000 | .000 |
| 0740 | 129 | | | | | | | 041 | 000 | .021 | .000 |
| 0800 | 133 | | | | | | | 040 | 000 | .114 | .000 |
| 0820 | 0820 | | | | | | | | | .000 | .000 |
| 0840 | 134 | | | | | 103-086 | | 042 | .185 | .070 | .000 |

TABLE A.25 OKINAWA TO PALO ALTO, STAR FISH

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|---------|-------------------------------|------------------------------------------|-------------------------------|------|-----------|--------------|-----------------|
| | | 151-140 | 124-120 | 162-070 | 110-096 102-090 106-101 | 063-060 083-077 081-076 079-077 | 064-061 071-068 063-061 | | | | |
| 0900 | 186 | | | | | | 115 | .155 | .110 | .029 | |
| 0920 | | | | | | | | | | .056 | |
| 0940 | 130 | | | | | | 124 | 000 | .059 | .075 | |
| 1000 | 178 | | | | | | 163 | 000 | .252 | .081 | |
| 1020 | 119 | | | | | | 114 | 000 | .221 | .000 | |
| 1040 | 169 | | | | | | 156 | 000 | .269 | .000 | |
| 1100 | 181 | | | | | | 162 | 000 | .241 | .000 | |
| 1120 | 170 | | | | | | 050 | .767 | .198 | .000 | |
| 1140 | 134 | | | | | | 050 | .083 | .050 | .000 | |
| 1200 | 118 | | | | | | 049 | .333 | .203 | .265 | |
| 1220 | 184 | | | | | | 043 | .326 | .077 | .000 | |
| 1240 | 138 | | | | | | 043 | .095 | .000 | .000 | |
| 1300 | 121 | | | | | | 045 | .000 | .000 | .000 | |
| 1320 | 092 | | | | | | 055 | .135 | .000 | .000 | |
| 1340 | 101 | | | | | | 054 | .000 | .000 | .000 | |
| 1400 | 101 | | | | | | 046 | .055 | .000 | .000 | |
| 1420 | 131 | | | | | | 066 | .185 | .000 | .000 | |
| 1440 | | | | | | | | | | .000 | |
| 1500 | | | | | | | | | | .000 | |
| 1520 | | | | | | | | | | .000 | |
| 1540 | | | | | | | | | | .000 | |
| 1600 | | | | | | | | | | .000 | |
| 1620 | | | | | | | | | | .000 | |
| 1640 | | | | | | | | | | .000 | |
| 1700 | | | | | | | | | | .000 | |
| 1720 | | | | | | | | | | .000 | |
| 1740 | | | | | | | | | | .000 | |
| 1800 | | | | | | | | | | .000 | |
| 1820 | | | | | | | | | | .000 | |
| 1840 | | | | | | | | | | .000 | |
| 1900 | | | | | | | | | | .000 | |
| 1920 | | | | | | | | | | .000 | |
| 1940 | | | | | | | | | | .000 | |
| 2000 | | | | | | | | | | .000 | |
| 2020 | | | | | | | | | | .000 | |
| 2040 | | | | | | | | | | .000 | |

0900 GMT 9 JULY

TABLE A.25 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 2100 | | | | | | | | | | | .000 | |
| 2120 | | | | | | | | | | | .000 | |
| 2140 | | | | | | | | | | | .000 | |
| 2200 | | | | | | | | | | | .000 | |
| 2220 | | | | | | | | | | | .000 | |
| 2240 | | | | | | | | | | | .000 | |
| 2300 | | | | | | | | | | | .000 | |
| 2320 | | | | | | | | | | | .000 | |
| 2340 | | | | | | | | | | | .000 | |
| 0000 | | | | | | | | | | | .000 | |
| 0020 | | | | | | | | | | | .000 | |
| 0040 | | | | | | | | | | | .000 | |
| 0100 | | | | | | | | | | | .000 | |
| 0120 | | | | | | | | | | | .000 | |
| 0140 | | | | | | | | | | | .000 | |
| 0200 | | | | | | | | | | | .000 | |
| 0220 | | | | | | | | | | | .000 | |
| 0240 | | | | | | | | | | | .000 | |
| 0300 | | | | | | | | | | | .000 | |
| 0320 | | | | | | | | | | | .000 | |
| 0340 | | | | | | | | | | | .000 | |
| 0400 | | | | | | | | | | | .000 | |
| 0420 | | | | | | | | | | | .000 | |
| 0440 | | | | | | | | | | | .074 | |
| 0500 | | | | | | | | | | | .000 | |
| 0520 | | | | | | | | | | | .000 | |
| 0540 | | | | | | | | | | | .000 | |
| 0600 | | | | | | | | | | | .000 | |
| 0620 | | | | | | | | | | | .000 | |
| 0640 | | | | | | | | | | | .000 | |
| 0700 | | | | | | | | | | | .000 | |
| 0720 | | | | | | | | | | | .000 | |
| 0740 | | | | | | | | | | | .000 | |
| 0800 | | | | | | | | | | | .000 | |
| 0820 | | | | | | | | | | | .000 | |
| 0840 | | | | | | | | | | | .000 | |

TABLE A.26 OKINAWA TO TUTUILA, STAR FISH

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|------------------------------------------|---------|--------------------|-------------------------------|-----------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------|-----|-----------|--------------|-----------------|
| | | 184-167 172-154 209-201 162-153 | 281-273 | 120-113 122-118 | 124-119 123-114 123-115 | 099-094 124-091 111-090 111-091 124-096 | 081-074 072-069 076-067 072-069 079-076 080-076 | 061-057 062-058 064-060 072-069 074-069 | | | | |
| 0900 | 203 | | | | | | | | 055 | .270 | .103 | .196 |
| 0920 | 284 | | | | | | | | 087 | .127 | .138 | .138 |
| 0940 | 297 | | | | | | | | 111 | .108 | .088 | .147 |
| 1000 | 234 | | | | | | | | 124 | .082 | .270 | .346 |
| 1020 | | | | | | | | | | | | .278 |
| 1040 | 214 | | | | | | | | 063 | .086 | .312 | .080 |
| 1100 | 127 | | | | | | | | 056 | .648 | .310 | .000 |
| 1120 | 132 | | | | | | | | 042 | .500 | .402 | .000 |
| 1140 | 133 | | | | | | | | 050 | .470 | .298 | .452 |
| 1200 | 127 | | | | | | | | 048 | .608 | .347 | .342 |
| 1220 | | | | | | | | | | | | .485 |
| 1240 | 068 | | | | | | | | 054 | .214 | .409 | .467 |
| 1300 | 093 | | | | | | | | 051 | .238 | .335 | .429 |
| 1320 | 067 | | | | | | | | 053 | .000 | .445 | .592 |
| 1340 | | | | | | | | | | | | .102 |
| 1400 | | | | | | | | | | | | .317 |
| 1420 | 092 | | | | | | | | 058 | .529 | .206 | .000 |
| 1440 | 070 | | | | | | | | 057 | .308 | .215 | .000 |
| 1500 | 118 | | | | | | | | 055 | .619 | .104 | .170 |
| 1520 | 093 | | | | | | | | 050 | .209 | .251 | .075 |
| 1540 | | | | | | | | | | | | .155 |
| 1600 | 136 | | | | | | | | 051 | .624 | .303 | .542 |
| 1620 | 129 | | | 122-119 | | | | | 081 | .250 | .264 | .373 |
| 1640 | | | | | | | | | | | | .277 |
| 1700 | | | | | | | | | | | | .531 |
| 1720 | | | | | | | | | | | | .077 |
| 1740 | | | | | | | | | | | | .297 |
| 1800 | | | | | | | | | | | | .574 |
| 1820 | | | | | | | | | | | | .622 |
| 1840 | 134 | | | | | | | | 083 | .000 | .311 | .001 |
| 1900 | 134 | | | 126-114 | | | | | 085 | .245 | .048 | .001 |
| 1920 | 151 | | | | | | | | 120 | .452 | .101 | .188 |
| 1940 | 155 | | | | | | | | 080 | .000 | .148 | .272 |
| 2000 | 127 | | | | | | | | 074 | .000 | .275 | .112 |
| 2020 | 154 | | | | | | | | 080 | .054 | .235 | .381 |
| 2040 | 155 | | | | | | | | 082 | .000 | .230 | .177 |
| 2040 | 172 | | | 141-133 | | | | | 097 | .267 | .161 | .170 |

0900 GMT 9 JULY

TABLE A.26 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|---------|---------|--|---------|-----|-----------|--------------|-----------------|
| 2100 | 199 | | | | 117-109 | | | 102 | .186 | .049 | .022 |
| 2120 | 184 | | | 177-167 | | | | 113 | .113 | .100 | .000 |
| 2140 | 179 | | | 176-168 | | | | 114 | .000 | .120 | .174 |
| 2200 | 201 | | | | | | | 115 | .000 | .058 | .053 |
| 2240 | 201 | | | | | | | 122 | .000 | .000 | .000 |
| 2300 | 265 | | | 175-165 | | | | 124 | .071 | .156 | .111 |
| 2320 | 274 | | | 185-174 | 139-135 | | | 115 | .094 | .047 | .047 |
| 2340 | | | | | | | | | | | .178 |
| 0000 | 276 | | | 177-166 | | | | 126 | .073 | .311 | .311 |
| 0020 | 283 | | | | | | | 120 | .000 | .151 | .146 |
| 0040 | 279 | | | 188-172 | | | | 120 | .000 | .443 | .528 |
| 0100 | 288 | | | 151-145 | | | | 125 | .037 | .202 | .202 |
| 0120 | 289 | | | 156-153 | 145-141 | | | 125 | .043 | .252 | .202 |
| 0140 | 289 | | | | | | | 124 | .000 | .301 | .374 |
| 0200 | 289 | | | | | | | 188 | .000 | .237 | .346 |
| 0220 | 280 | | | | | | | | | | .237 |
| 0240 | | | | | | | | | | | .000 |
| 0300 | 272 | | | | | | | 122 | .000 | .155 | .164 |
| 0320 | 279 | | | 141-125 | | | | 108 | .094 | .168 | .168 |
| 0340 | 273 | | | 194-186 | 157-124 | | | 120 | .268 | .045 | .000 |
| 0400 | 319 | | | 191-179 | 153-130 | | | 118 | .174 | .043 | .000 |
| 0420 | 261 | | | 197-185 | 149-142 | | | 109 | .197 | .115 | .141 |
| 0440 | 323 | | 198-191 | 175-159 | 152-141 | | 137-126 | 126 | .167 | .068 | .137 |
| 0500 | 316 | | | | | | | 174 | .000 | .028 | .056 |
| 0520 | 324 | | | 169-154 | 147-133 | | | 121 | .000 | .143 | .000 |
| 0540 | 315 | | | | | | | 180 | .074 | .118 | .177 |
| 0600 | 251 | | 200-190 | 233-185 | | | | 153 | .490 | .029 | .000 |
| 0620 | 290 | | | 196-181 | | | | 174 | .000 | .054 | .079 |
| 0640 | 295 | | | | | | | 117 | .084 | .090 | .036 |
| 0700 | | | | | | | | | | | .071 |
| 0720 | 300 | | | 187-174 | 166-155 | | | 104 | .122 | .077 | .097 |
| 0740 | 329 | | | 198-176 | | | 096-091 | 075 | .173 | .237 | .042 |
| 0800 | 320 | | 306-289 | 198-181 | | | | 092 | .076 | .152 | .201 |
| 0820 | 317 | | | | | | 098-086 | 065 | .048 | | .126 |
| 0840 | | | | | | | | | | | .250 |

TABLE A.27 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----|-----------|--------------|-----------------|
| 2100 | 158 | | | | | | | 114 | 000 | .000 | .000 | |
| 2120 | 160 | | | | | | | 106 | 000 | .000 | .000 | |
| 2140 | 152 | | | | | | | 115 | 000 | .000 | .000 | |
| 2200 | 179 | | | | | | | 116 | 000 | .000 | .000 | |
| 2220 | 199 | | | | | | | 112 | 000 | .000 | .000 | |
| 2240 | 193 | | | | | | | 105 | 000 | .000 | .000 | |
| 2300 | 154 | | | | | | | 116 | 000 | .000 | .000 | |
| 2320 | 145 | | | | | | | 106 | 000 | .000 | .000 | |
| 2340 | 174 | | | | | | | 114 | 000 | .000 | .000 | |
| 0000 | | | | | | | | | | | | |
| 0020 | 171 | | | | | | | | | | | |
| 0040 | 138 | | | | | | | 122 | 000 | .000 | .000 | |
| 0100 | 146 | | | | | | | 111 | 000 | .000 | .000 | |
| 0120 | | | | | | | | 111 | 000 | .000 | .000 | |
| 0140 | | | | | | | | | | | | |
| 0200 | | | | | | | | | | | | |
| 0220 | 147 | | | | | | | 120 | 000 | .000 | .000 | |
| 0240 | 174 | | | | | | | 122 | 000 | .000 | .000 | |
| 0300 | | | | | | | | | | | | |
| 0320 | 180 | | | | | | | 124 | 000 | .000 | .000 | |
| 0340 | 183 | | | | | | | 121 | 000 | .000 | .000 | |
| 0400 | 160 | | | | | | | 113 | 000 | .000 | .000 | |
| 0420 | 155 | | | | | | | 125 | 000 | .000 | .000 | |
| 0440 | 160 | | | | | | | 122 | 000 | .000 | .000 | |
| 0500 | | | | | | | | | | | | |
| 0520 | 146 | | | | | | | 118 | 000 | .000 | .000 | |
| 0540 | | | | | | | | | | | | |
| 0600 | | | | | | | | | | | | |
| 0620 | 159 | | | | | | | | | | | |
| 0640 | 154 | | | | | | | 122 | 000 | .000 | .000 | |
| 0700 | 189 | | | | | | | 110 | 000 | .000 | .000 | |
| 0720 | 196 | | | | | | | 118 | 000 | .000 | .000 | |
| 0740 | 203 | | | | | | | 086 | 000 | .000 | .000 | |
| 0800 | 222 | | | | | | | 053 | 000 | .000 | .000 | |
| 0820 | 219 | | | | | | | 042 | 000 | .000 | .000 | |
| 0840 | 215 | | | | | | | 041 | 000 | .000 | .000 | |
| | | | | | | | | 041 | 000 | .000 | .000 | |

TABLE A.28 ROI-NAMUR TO HAWAII, CHECK MATE

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY | | | | | | | | | | | |
|------|-----|---------------------|--------------------|---------|--------------------|--------------------|----------------------------------------------------------------|-----|-----------|--------------|-----------------|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|--------------------|--------------------|------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|
| | | 238-227 | 164-136 220-179 | 127-116 | 093-087 100-091 | 064-060 084-079 | 061-056 061-058 063-058 063-058 062-058 064-058 | | | | | 074-072 074-070 081-078 102-094 100-091 109-078 073-071 080-075 080-074 084-072 | 074-072 074-070 081-078 102-094 100-091 109-078 | 077-071 077-071 | 061-060 077-069 | 040 042 040 041 040 040 042 041 040 040 043 040 040 045 052 065 194 050 038 040 | .077 .135 .229 | .048 .120 .066 | .000 .053 .138 .178 .258 .300 .394 .203 .149 .132 .051 .220 .000 .071 .280 .188 .360 .447 .203 .194 .257 .057 .435 .289 .277 .055 .053 .270 .313 .248 .261 .146 .225 .058 .115 .060 .000 .129 .000 .000 .000 .000 .000 .037 .006 .000 | | | |
| 0820 | 313 | | | | | | | | | | | | | | | | | | | | | |
| 0840 | 300 | | | | | | | | | | | | | | | | | | | | | |
| 0900 | 316 | | | | | | | | | | | | | | | | | | | | | |
| 0920 | | | | | | | | | | | | | | | | | | | | | | |
| 0940 | | | | | | | | | | | | | | | | | | | | | | |
| 1000 | | | | | | | | | | | | | | | | | | | | | | |
| 1020 | | | | | | | | | | | | | | | | | | | | | | |
| 1040 | | | | | | | | | | | | | | | | | | | | | | |
| 1100 | | | | | | | | | | | | | | | | | | | | | | |
| 1120 | | | | | | | | | | | | | | | | | | | | | | |
| 1140 | | | | | | | | | | | | | | | | | | | | | | |
| 1200 | | | | | | | | | | | | | | | | | | | | | | |
| 1220 | | | | | | | | | | | | | | | | | | | | | | |
| 1240 | | | | | | | | | | | | | | | | | | | | | | |
| 1300 | 265 | | | | | | | | | | | | | | | | | | | | | |
| 1320 | 286 | | | | | | | | | | | | | | | | | | | | | |
| 1340 | 264 | | | | | | | | | | | | | | | | | | | | | |
| 1400 | 188 | | | | | | | | | | | | | | | | | | | | | |
| 1420 | 243 | | | | | | | | | | | | | | | | | | | | | |
| 1440 | 232 | | | | | | | | | | | | | | | | | | | | | |
| 1500 | 142 | | | | | | | | | | | | | | | | | | | | | |
| 1520 | 176 | | | | | | | | | | | | | | | | | | | | | |
| 1540 | 131 | | | | | | | | | | | | | | | | | | | | | |
| 1600 | 040 | | | | | | | | | | | | | | | | | | | | | |
| 1620 | 073 | | | | | | | | | | | | | | | | | | | | | |
| 1640 | 079 | | | | | | | | | | | | | | | | | | | | | |
| 1700 | 136 | | | | | | | | | | | | | | | | | | | | | |
| 1720 | 168 | | | | | | | | | | | | | | | | | | | | | |
| 1740 | 148 | | | | | | | | | | | | | | | | | | | | | |
| 1800 | 148 | | | | | | | | | | | | | | | | | | | | | |
| 1820 | | | | | | | | | | | | | | | | | | | | | | |
| 1840 | 307 | | | | | | | | | | | | | | | | | | | | | |
| 1900 | 856 | | | | | | | | | | | | | | | | | | | | | |
| 1920 | 177 | | | | | | | | | | | | | | | | | | | | | |
| 1940 | 357 | | | | | | | | | | | | | | | | | | | | | |
| 2000 | 350 | | | | | | | | | | | | | | | | | | | | | |

TABLE A.28 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 2020 | 381 | | | | | | | 048 | 000 | .147 | .000 |
| 2040 | 374 | | | | | | | 048 | 000 | .024 | .000 |
| 2100 | 380 | | | | | | | 048 | 000 | .055 | .000 |
| 2120 | | | | | | | | | | | .000 |
| 2140 | | | | | | | | | | | .000 |
| 2200 | 389 | | | | | | | 060 | 000 | .023 | .000 |
| 2220 | 385 | | | | | | | 060 | 000 | .008 | .017 |
| 2240 | 379 | | | | | | | 064 | 000 | .000 | .000 |
| 2300 | 387 | | | | | | | 061 | 000 | .013 | .027 |
| 2320 | 387 | | | | | | | 054 | 000 | .000 | .000 |
| 2340 | 405 | | | | | | | 054 | 000 | .046 | .138 |
| 0000 | 423 | | | | | | | 054 | 000 | .014 | .000 |
| 0020 | 458 | | | | | | | 054 | 000 | .157 | .228 |
| 0040 | 480 | | | | | | | 063 | 000 | .212 | .106 |
| 0100 | 502 | | | | | | | 059 | 000 | .025 | .195 |
| 0120 | 542 | | | | | | | 050 | 000 | .073 | .170 |
| 0140 | 469 | | | | | | | 048 | 000 | .025 | .046 |
| 0200 | | | | | | | | | | | .064 |
| 0220 | 472 | | | | | | | 051 | 000 | .056 | .127 |
| 0240 | | | | | | | | | | | .041 |
| 0300 | 420 | | | | | | | | | | .321 |
| 0320 | 428 | | | | | | | 059 | 000 | .160 | .070 |
| 0340 | | | | | | | | 063 | 000 | .035 | .084 |
| 0400 | | | | | | | | | | | .379 |
| 0420 | 295 | | | | | | | 054 | 000 | .012 | .344 |
| 0440 | | | | | | | | | | | .287 |
| 0500 | 364 | | | | | | | 040 | 000 | .155 | .000 |
| 0520 | 367 | | | | | | | 040 | 000 | .000 | .000 |
| 0540 | 354 | | | | | | | 040 | 000 | .000 | .000 |
| 0600 | 387 | | | | | | | 040 | .017 | .004 | .000 |
| 0620 | 334 | | | | | | | 040 | 000 | .008 | .033 |
| 0640 | 337 | | | | | | | 040 | 000 | .011 | .088 |
| 0700 | 266 | | | | | | | 040 | 000 | .044 | .108 |
| 0720 | 282 | | | | | | | 040 | 000 | .036 | .022 |
| 0740 | | | | | | | | | | | .000 |
| 0800 | 238 | | | | | | | 040 | 000 | .038 | .000 |

100-094

TABLE A.29 ROI-NAMUR TO KAUAI, CHECK MATE

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | DKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0820 | 286 | | | | | | | 040 | 000 | .000 | .000 |
| 0840 | 382 | | | | | | | 124 | 000 | .000 | .000 |
| 0900 | 343 | | | | | | | 043 | 000 | .000 | .000 |
| 0920 | 332 | | | | | | | 042 | 000 | .000 | .000 |
| 0940 | 342 | | | | | | | 040 | 000 | .000 | .000 |
| 1000 | 317 | | | | | | | 041 | 000 | .000 | .000 |
| 1020 | 329 | | | | | | | 041 | 000 | .000 | .000 |
| 1040 | 333 | | | | | | | 040 | 000 | .000 | .000 |
| 1100 | 360 | | | | | | | 040 | 000 | .000 | .000 |
| 1120 | 340 | | | | | | | 040 | 000 | .000 | .000 |
| 1140 | 339 | | | | | | | 041 | 000 | .000 | .000 |
| 1200 | 311 | | | | | | | 041 | 000 | .050 | .000 |
| 1220 | 284 | | | | | | | 040 | .114 | .000 | .000 |
| 1240 | 269 | | | | | | | 040 | 000 | .000 | .000 |
| 1300 | | | | | | | | 040 | 000 | .000 | .000 |
| 1320 | | | | | | | | | | .000 | .000 |
| 1340 | | | | | | | | | | .000 | .000 |
| 1400 | | | | | | | | | | .000 | .000 |
| 1420 | | | | | | | | | | .000 | .000 |
| 1440 | | | | | | | | | | .000 | .000 |
| 1500 | | | | | | | | | | .000 | .000 |
| 1520 | | | | | | | | | | .000 | .000 |
| 1540 | | | | | | | | | | .000 | .000 |
| 1600 | 132 | | | | | | | 040 | 000 | .000 | .000 |
| 1620 | 135 | | | | | | | 040 | 000 | .000 | .000 |
| 1640 | 126 | | | | | | | 040 | 000 | .000 | .000 |
| 1700 | 125 | | | | | | | 040 | 000 | .000 | .000 |
| 1720 | 158 | | | | | | | 040 | 000 | .000 | .000 |
| 1740 | 113 | | | | | | | 040 | 000 | .000 | .000 |
| 1800 | 150 | | | | | | | 040 | 000 | .000 | .000 |
| 1820 | 231 | | | | | | | 040 | 000 | .000 | .000 |
| 1840 | 265 | | | | | | | 046 | 000 | .000 | .000 |
| 1900 | 272 | | | | | | | 047 | 000 | .000 | .000 |
| 1920 | 308 | | | | | | | 047 | 000 | .000 | .000 |
| 1940 | | | | | | | | 040 | 000 | .000 | .000 |
| 2000 | 381 | | | | | | | 052 | .122 | .000 | .000 |

0630 OCT 20 OCT.

TABLE A.80 CANTON TO FAIRBANKS, CHECK MATE

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0820 | 147 | | | | | | | 047 | 000 | .000 | .000 |
| 0840 | 069 | | | | | | | 047 | 000 | .011 | .000 |
| 0900 | 083 | | | | | | | 043 | 000 | .011 | .000 |
| 0920 | 092 | | | | | | | 044 | 000 | .000 | .000 |
| 0940 | 066 | | | | | | | 043 | 000 | .028 | .000 |
| 1000 | 069 | | | | | | | 040 | 000 | .000 | .000 |
| 1020 | 081 | | | | | | | 040 | 000 | .000 | .000 |
| 1040 | 069 | | | | | | | 040 | 000 | .000 | .000 |
| 1100 | 081 | | | | | | | 044 | 000 | .056 | .000 |
| 1120 | 081 | | | | | | | 044 | 000 | .000 | .000 |
| 1140 | 075 | | | | | | | 043 | 000 | .000 | .000 |
| 1200 | 100 | | | | | | | 044 | 000 | .000 | .000 |
| 1220 | 120 | | | | | | | 042 | 000 | .000 | .000 |
| 1240 | 097 | | | | | | | 043 | 000 | .000 | .000 |
| 1300 | 093 | | | | | | | 041 | 000 | .000 | .000 |
| 1320 | 121 | | | | | | | 041 | 000 | .000 | .000 |
| 1340 | 116 | | | | | | | 042 | 000 | .000 | .000 |
| 1400 | 132 | | | | | | | 043 | 000 | .000 | .000 |
| 1420 | 118 | | | | | | | 042 | 000 | .000 | .000 |
| 1440 | 112 | | | | | | | 070 | 000 | .000 | .000 |
| 1500 | 113 | | | | | | | 040 | 000 | .000 | .000 |
| 1520 | 141 | | | | | | | 040 | 000 | .000 | .000 |
| 1540 | 133 | | | | | | | 040 | 030 | .000 | .000 |
| 1600 | 118 | | | | | | | 040 | 000 | .000 | .000 |
| 1620 | 117 | | | | | | | 040 | 000 | .000 | .000 |
| 1640 | 127 | | | | | | | 041 | 000 | .000 | .000 |
| 1700 | 136 | | | | | | | 068 | 000 | .011 | .000 |
| 1720 | 155 | | | | | | | 105 | 000 | .000 | .000 |
| 1740 | 188 | | | | | | | 104 | 000 | .000 | .000 |
| 1800 | 202 | | | | | | | 102 | 000 | .006 | .000 |
| 1820 | 221 | | | | | | | 104 | 000 | .000 | .000 |
| 1840 | 222 | | | | | | | 105 | 000 | .000 | .000 |
| 1900 | 232 | | | | | | | 112 | 000 | .000 | .000 |
| 1920 | 238 | | | | | | | 107 | 000 | .000 | .000 |
| 1940 | 235 | | | | | | | 120 | 000 | .000 | .000 |
| 2000 | 245 | | | | | | | 118 | 000 | .000 | .000 |

0830 GMT 20 OCT.

126-123

TABLE A.30 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 2020 | 269 | | | | | | | 128 | 000 | .000 | .000 |
| 2040 | 243 | | | | | | | 129 | 000 | .023 | .000 |
| 2100 | 240 | | | | | | | 126 | 000 | .000 | .000 |
| 2120 | 219 | | | | | | | 127 | 000 | .000 | .000 |
| 2140 | 230 | | | | | | | 135 | 000 | .000 | .000 |
| 2200 | 234 | | | | | | | 127 | 000 | .000 | .000 |
| 2220 | 227 | | | | | | | 151 | 000 | .012 | .000 |
| 2240 | | | | | | | | | | | .000 |
| 2300 | 241 | | | | | | | 130 | 000 | .065 | .196 |
| 2320 | 253 | | | | | | | 141 | 000 | .000 | .000 |
| 2340 | 260 | | | | | | | 158 | 000 | .000 | .000 |
| 0000 | 239 | | | | | | | 158 | 000 | .000 | .000 |
| 0020 | 262 | | | | | | | 169 | 000 | .000 | .000 |
| 0040 | 280 | | | | | | | 179 | 000 | .000 | .000 |
| 0100 | 299 | | | | | | | 128 | 000 | .000 | .000 |
| 0120 | | | | | | | | | | | .000 |
| 0140 | 258 | | | | | | | 132 | 000 | .000 | .000 |
| 0200 | 233 | | | | | | | 128 | 000 | .040 | .000 |
| 0220 | | | | | | | | | | | .000 |
| 0240 | | | | | | | | | | | .000 |
| 0300 | 232 | | | | | | | 105 | 000 | .000 | .000 |
| 0320 | 215 | | | | | | | 103 | 000 | .000 | .000 |
| 0340 | 212 | | | | | | | 104 | 000 | .000 | .000 |
| 0400 | 231 | | | | | | | 105 | 000 | .000 | .000 |
| 0420 | 242 | | | | | | | 087 | 000 | .000 | .000 |
| 0440 | 218 | | | | | | | 106 | 000 | .000 | .000 |
| 0500 | 204 | | | | | | | 074 | 000 | .000 | .000 |
| 0520 | 193 | | | | | | | 050 | 000 | .000 | .000 |
| 0540 | 182 | | | | | | | 040 | 000 | .000 | .000 |
| 0600 | 142 | | | | | | | 045 | 000 | .000 | .000 |
| 0620 | 138 | | | | | | | 045 | 000 | .000 | .000 |
| 0640 | 133 | | | | | | | 040 | 000 | .000 | .000 |
| 0700 | 135 | | | | | | | 050 | 000 | .000 | .000 |
| 0720 | 093 | | | | | | | 049 | 000 | .041 | .000 |
| 0740 | 091 | | | | | | | 049 | .048 | .190 | .000 |
| 0800 | 176 | | | | | | | 040 | .103 | .167 | .000 |
| | 138 | | | | | | | 045 | 000 | .000 | .000 |

063-061

153-139

TABLE A.31 CANTON TO MIDWAY, CHECK MATE

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--------------------|--|--|--|--|-----|-----------|--------------|-----------------|
| 0820 | 153 | | | | | | | 043 | .364 | .105 | .000 |
| 0840 | 283 | | | | | | | 062 | .376 | .105 | .000 |
| 0900 | 269 | | 231-197 | | | | | 054 | .102 | .106 | .000 |
| 0920 | 269 | | | | | | | 052 | .175 | .061 | .000 |
| 0940 | 289 | | 268-245 | | | | | 053 | .157 | .024 | .000 |
| 1000 | 216 | | 217-209 248-231 | | | | | 055 | .161 | .121 | .000 |
| 1020 | | | | | | | | | | | .000 |
| 1040 | 223 | | | | | | | 050 | .000 | .188 | .000 |
| 1100 | 235 | | | | | | | 053 | .170 | .095 | .000 |
| 1120 | 257 | | | | | | | 054 | .227 | .218 | .000 |
| 1140 | 261 | | | | | | | 052 | .254 | .200 | .000 |
| 1200 | 230 | | 160-152 | | | | | 053 | .158 | .229 | .000 |
| 1220 | 218 | | | | | | | 053 | .127 | .324 | .000 |
| 1240 | 188 | | | | | | | 052 | .096 | .328 | .000 |
| 1300 | 159 | | | | | | | 042 | .239 | .071 | .000 |
| 1320 | 191 | | | | | | | 052 | .000 | .286 | .000 |
| 1340 | 180 | | | | | | | | | | .591 |
| 1400 | 175 | | | | | | | 052 | .609 | .544 | .444 |
| 1420 | 161 | | 168-135 | | | | | 049 | .254 | .549 | .617 |
| 1440 | 139 | | | | | | | 053 | .333 | .348 | .357 |
| 1500 | 074 | | | | | | | | | | .302 |
| 1520 | 068 | | | | | | | 052 | .506 | .000 | .000 |
| 1540 | 117 | | | | | | | 052 | .000 | .531 | .400 |
| 1600 | 109 | | | | | | | 051 | .000 | .220 | .172 |
| 1620 | 132 | | | | | | | 051 | .000 | .398 | .000 |
| 1640 | 173 | | | | | | | | | | .235 |
| 1700 | 202 | | | | | | | 055 | .480 | .480 | .275 |
| 1720 | 228 | | | | | | | 051 | .000 | .299 | .044 |
| 1740 | 270 | | | | | | | 057 | .216 | .353 | .333 |
| 1800 | 306 | | | | | | | 084 | .000 | .297 | .056 |
| 1820 | 261 | | | | | | | 108 | .000 | .182 | .075 |
| 1840 | 265 | | | | | | | 083 | .000 | .153 | .108 |
| 1900 | | | | | | | | 087 | .000 | .095 | .090 |
| 1920 | | | | | | | | | | | .138 |
| 1940 | | | | | | | | | | | .043 |
| 2000 | | | | | | | | 060 | .000 | .052 | .096 |
| | | | | | | | | 059 | .000 | .096 | .000 |

0830 GMT 20 OCT.

TABLE A.32 KAUAI TO WAKE, CHECK MATE

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BAND AVERAGE | SINGLE BAND DAY |
|------|-----|---------------------|------------------------------------------|-------------------------------|------------------------------------------|--------------------|-------------------------------|--------------------|-----|-----------|--------------|-----------------|
| | | 254-242 | 413-397 308-281 408-389 509-294 | 503-475 442-365 497-475 | 297-275 244-200 279-196 270-193 | 160-118 131-127 | 176-167 131-111 075-072 | 099-092 117-109 | | | | |
| 0820 | 262 | | | | | | | | 040 | .284 | .000 | |
| 0840 | 172 | | | | | | | | 040 | .174 | .025 | |
| 0920 | | | | | | | | | | | .046 | |
| 0940 | 571 | | | | | | | | 046 | .208 | .037 | |
| 1000 | 570 | | | | | | | | 044 | .380 | .022 | |
| 1020 | 640 | | | | | | | | 046 | .244 | .032 | |
| 1040 | 531 | | | | | | | | 141 | .749 | .022 | |
| 1100 | | | | | | | | | | | .094 | |
| 1120 | 289 | | | | | | | | 065 | .504 | .047 | |
| 1140 | | | | | | | | | | | .094 | |
| 1200 | 283 | | | | | | | | 064 | .694 | .099 | |
| 1220 | 516 | | | | | | | | 063 | .510 | .043 | |
| 1240 | 286 | | | | | | | | 047 | .644 | .029 | |
| 1300 | 602 | | | | | | | | 059 | .147 | .075 | |
| 1320 | | | | | | | | | | | .125 | |
| 1340 | | | | | | | | | | | .000 | |
| 1400 | | | | | | | | | | | .000 | |
| 1420 | | | | | | | | | | | .000 | |
| 1440 | | | | | | | | | | | .000 | |
| 1500 | | | | | | | | | | | .000 | |
| 1520 | | | | | | | | | | | .000 | |
| 1540 | | | | | | | | | | | .000 | |
| 1600 | | | | | | | | | 040 | B | .000 | |
| 1620 | | | | | | | | | | | .000 | |
| 1640 | | | | | | | | | 046 | .469 | .000 | |
| 1700 | | | | | | | | | | | .000 | |
| 1720 | | | | | | | | | | | .000 | |
| 1740 | | | | | | | | | | | .000 | |
| 1800 | | | | | | | | | | | .000 | |
| 1820 | 182 | | | | | | | | 040 | .162 | .008 | |
| 1840 | 235 | | | | | | | | 195 | .000 | .133 | |
| 1900 | 242 | | | | | | | | 190 | .000 | .009 | |
| 1920 | 236 | | | | | | | | 170 | .000 | .063 | |
| 1940 | 290 | | | | | | | | 166 | .000 | .006 | |
| 2000 | 316 | | | | | | | | 166 | .000 | .004 | |

0830 082 20 027.

TABLE A.32 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 2020 | 267 | | | | | | | 165 | 000 | .008 | .007 |
| 2040 | 319 | | | | | | | 165 | 000 | .003 | .007 |
| 2100 | 318 | | | | | | | 163 | 000 | .000 | .000 |
| 2120 | 316 | | | | | | | 177 | 000 | .163 | .326 |
| 2140 | 317 | | | | | | | 166 | 000 | .233 | .211 |
| 2200 | | | | | | | | | | | .356 |
| 2220 | 320 | | | | | | | 179 | 000 | .124 | .000 |
| 2240 | 315 | | | | | | | 169 | 000 | .103 | .000 |
| 2300 | 315 | | | | | | | 166 | 000 | .135 | .000 |
| 2320 | 317 | | | | | | | 207 | 000 | .128 | .000 |
| 2340 | 314 | | | | | | | 189 | 000 | .127 | .096 |
| 0000 | 313 | | | | | | | 217 | 000 | .069 | .000 |
| 0020 | 314 | | | | | | | 220 | 000 | .065 | .000 |
| 0040 | 315 | | | | | | | 164 | 000 | .034 | .000 |
| 0100 | 314 | | | | | | | 182 | 000 | .000 | .000 |
| 0120 | 294 | | | | | | | 161 | 000 | .000 | .011 |
| 0140 | 320 | | | | | | | 185 | 000 | .000 | .126 |
| 0200 | 312 | | | | | | | 165 | 000 | .007 | .000 |
| 0220 | 359 | | | | | | | 157 | 000 | .007 | .000 |
| 0240 | 319 | | | | | | | 164 | 000 | .012 | .000 |
| 0300 | 322 | | | | | | | 158 | 000 | .000 | .000 |
| 0320 | 331 | | | | | | | 166 | 000 | .000 | .000 |
| 0340 | 307 | | | | | | | 160 | 000 | .020 | .007 |
| 0400 | 293 | | | | | | | 160 | 000 | .119 | .000 |
| 0420 | 328 | | | | | | | 157 | 000 | .092 | .008 |
| 0440 | 314 | | | | | | | 165 | 000 | .009 | .000 |
| 0500 | 317 | | | | | | | 047 | .281 | .036 | .010 |
| 0520 | 280 | | | | | | | 040 | .325 | .037 | .009 |
| 0540 | 272 | | | | | | | 040 | .172 | .050 | .000 |
| 0600 | | | | | | | | 040 | .216 | .033 | .000 |
| 0620 | | | | | | | | | | | .000 |
| 0640 | | | | | | | | | | | .279 |
| 0700 | 229 | | | | | | | 040 | .175 | .052 | .000 |
| 0720 | 213 | | | | | | | 040 | .191 | .045 | .186 |
| 0740 | 250 | | | | | | | 040 | .162 | .017 | .073 |
| 0800 | 080 | | | | | | | 040 | .000 | .005 | .000 |

TABLE A.33 KAUAI TO MIDWAY, CHECK MATE

| TIME | MOF | GAPS IN HF SPECTRUM | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--------------------|---------|-----|-----------|--------------|-----------------|
| 0820 | 213 | | | | | 040 | .017 | .055 | .000 |
| 0840 | 115 | | | | | 040 | .320 | .045 | .000 |
| 0900 | 127 | | | | | 040 | .161 | .052 | .000 |
| 0920 | 110 | | | | | 040 | .300 | .074 | .000 |
| 0940 | 113 | | | | | 047 | .061 | .086 | .000 |
| 1000 | 106 | | | | | 041 | .185 | .029 | .000 |
| 1020 | 101 | | | | | 041 | .333 | .035 | .000 |
| 1040 | 095 | | | | | 041 | .167 | .050 | .000 |
| 1100 | 084 | | | | | 040 | .159 | .023 | .000 |
| 1120 | 093 | | | | 063-059 | 048 | .000 | .032 | .000 |
| 1140 | 095 | | | | | 051 | .000 | .120 | .000 |
| 1200 | 093 | | | | | 040 | .075 | .013 | .000 |
| 1220 | 092 | | | | | 040 | .077 | .043 | .000 |
| 1240 | 079 | | | | | 042 | .216 | .042 | .000 |
| 1300 | 121 | | | | | 040 | .086 | .192 | .000 |
| 1320 | 068 | | | 075-072 099-095 | | 040 | .179 | .094 | .148 |
| 1340 | | | | | | 040 | | .085 | .085 |
| 1400 | 133 | | | | | 041 | .033 | .081 | .128 |
| 1420 | 148 | | | | | 041 | .000 | .167 | .238 |
| 1440 | 137 | | | | | 041 | .000 | .100 | .208 |
| 1500 | 075 | | | | | 042 | .000 | .144 | .000 |
| 1520 | 071 | | | | | 042 | .000 | .118 | .000 |
| 1540 | 058 | | | | | 041 | .000 | .107 | .056 |
| 1600 | 061 | | | | | 041 | .000 | .067 | .000 |
| 1620 | 060 | | | | | 041 | .000 | .020 | .000 |
| 1640 | | | | | | 041 | .000 | .020 | .000 |
| 1700 | 079 | | | | | 051 | .000 | .106 | .091 |
| 1720 | 112 | | | | | 042 | .000 | .310 | .435 |
| 1740 | 133 | | | | | 053 | .000 | .041 | .000 |
| 1800 | 176 | | | | | 053 | .000 | .000 | .040 |
| 1820 | 199 | | | | | 052 | .000 | .060 | .142 |
| 1840 | 227 | | | | | 052 | .000 | .116 | .034 |
| 1900 | 246 | | | | | 052 | .000 | .101 | .027 |
| 1920 | | | | | | 058 | .000 | .036 | .031 |
| 1940 | 284 | | | | | 053 | .000 | .058 | .000 |
| 2000 | 271 | | | | | 053 | .000 | .058 | .094 |

0830 GMT 20 OCT.

TABLE A.33 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|--|--------------------|--|-----|-----------|--------------|-----------------|
| 2020 | 248 | | | | | | | 053 | 000 | .115 | .094 |
| 2040 | 224 | | | | | | | 053 | 000 | .000 | .000 |
| 2100 | 231 | | | | | | | 050 | 000 | .037 | .000 |
| 2120 | 252 | | | | | | | 056 | 000 | .188 | .098 |
| 2140 | 276 | | | | | | | 054 | 000 | .033 | .010 |
| 2200 | 295 | | | | | | | 057 | 000 | .038 | .000 |
| 2220 | 317 | | | | | | | 054 | 000 | .043 | .038 |
| 2240 | 334 | | | | | | | 055 | 000 | .117 | .162 |
| 2300 | 335 | | | | | | | | 000 | .054 | .071 |
| 2320 | 326 | | | | | | | 053 | 000 | .057 | .037 |
| 2340 | 323 | | | | | | | 054 | 000 | .089 | .000 |
| 0000 | 328 | | | | | | | 052 | 000 | .057 | .000 |
| 0020 | 320 | | | | | | | 050 | 000 | .028 | .026 |
| 0100 | 326 | | | | | | | 050 | 000 | .065 | .109 |
| 0120 | 332 | | | | | | | 051 | 000 | .085 | .071 |
| 0140 | 312 | | | | | | | 052 | 000 | .020 | .070 |
| 0200 | 313 | | | | | | | 051 | 000 | .009 | .000 |
| 0220 | 316 | | | | | | | 051 | 000 | .028 | .056 |
| 0240 | 318 | | | | | | | 040 | 007 | .016 | .000 |
| 0300 | 328 | 286-269 | | | | | | 040 | .018 | .013 | .017 |
| 0320 | 281 | | | 141-135 | | 110-106 | | 040 | .097 | .007 | .000 |
| 0340 | 230 | | | | | | | 083 | .016 | .000 | .000 |
| 0400 | 213 | | | | | | | 040 | .008 | .000 | .000 |
| 0420 | 202 | | | 140-134 | | 110-106 | | 040 | .016 | .006 | .013 |
| 0440 | 179 | | | | | | | 040 | .075 | .000 | .000 |
| 0500 | 162 | | | | | | | 040 | .025 | .000 | .000 |
| 0520 | 189 | | | | | | | 040 | 000 | .000 | .000 |
| 0540 | 153 | | | | | | | 040 | .016 | .000 | .000 |
| 0600 | 167 | | | | | | | 040 | .080 | .081 | .081 |
| 0620 | 126 | | | 159-155 | | 143-129 135-129 | | 040 | .031 | .014 | .014 |
| 0640 | 187 | | | | | | | 040 | .000 | .023 | .023 |
| 0700 | 222 | | | 170-149 | | | | 040 | .156 | .149 | .219 |
| 0720 | | | | | | | | 040 | .088 | .057 | .089 |
| 0740 | | | | | | | | | | .000 | .000 |
| 0800 | | | | | | 069-065 | | 040 | .077 | .187 | .338 |

TABLE A.34 CANTON TO HAWAII, CHECK MATE

0830 GMT 20 OCT.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BMGD AVERAGE | SINGLE BMGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0820 | 301 | | | | | | | 040 | 000 | .052 | .000 |
| 0840 | 315 | | | | | | | 040 | 000 | .043 | .026 |
| 0900 | 636 | | | | | | | 040 | .064 | .078 | .041 |
| 0920 | 379 | | | | | | | 040 | 000 | .139 | .109 |
| 0940 | 423 | | | | | | | 040 | 000 | .085 | .137 |
| 1000 | 576 | | | | | | | 040 | 000 | .060 | .065 |
| 1020 | 571 | | | | | | | 040 | 000 | .097 | .000 |
| 1040 | 588 | | | | | | | 040 | 000 | .153 | .000 |
| 1100 | 620 | | | | | | | 040 | 000 | .191 | .091 |
| 1120 | 552 | | | | | | | 040 | 000 | .198 | .000 |
| 1140 | 476 | | | | | | | 042 | 000 | .169 | .142 |
| 1200 | 356 | | | | | | | 040 | 000 | .180 | .000 |
| 1220 | 372 | | | | | | | 043 | 000 | .194 | .000 |
| 1240 | 539 | | | | | | | 044 | 000 | .216 | .076 |
| 1300 | 350 | | | | | | | 040 | .149 | .244 | .173 |
| 1320 | 306 | | | | | | | 043 | 019 | .251 | .293 |
| 1340 | 376 | | | | | | | 040 | 000 | .182 | .191 |
| 1400 | 286 | | | | | | | 040 | 000 | .126 | .053 |
| 1420 | 256 | | | | | | | 044 | 000 | .137 | .000 |
| 1440 | 316 | | | | | | | 044 | 000 | .124 | .124 |
| 1500 | 226 | | | | | | | 041 | .047 | .214 | .100 |
| 1520 | 233 | | | | | | | 040 | .093 | .041 | .041 |
| 1540 | 235 | | | | | | | 040 | .144 | .156 | .033 |
| 1600 | 040 | | | | | | | 040 | B | .120 | .187 |
| 1620 | 172 | | | | | | | 043 | 000 | .093 | .104 |
| 1640 | 164 | | | | | | | 052 | 000 | .104 | .122 |
| 1700 | 188 | | | | | | | 056 | .076 | .684 | .047 |
| 1720 | 203 | | | | | | | 053 | .093 | .073 | .000 |
| 1740 | 234 | | | | | | | 055 | .084 | .029 | .049 |
| 1800 | 236 | | | | | | | 097 | .029 | .030 | .041 |
| 1820 | 240 | | | | | | | 104 | .045 | .012 | .037 |
| 1840 | 261 | | | | | | | 104 | .000 | .000 | .000 |
| 1900 | 267 | | | | | | | 059 | .024 | .000 | .000 |
| 1920 | 269 | | | | | | | 061 | 000 | .000 | .000 |
| 1940 | 280 | | | | | | | 064 | 000 | .000 | .000 |
| 2000 | 298 | | | | | | | 057 | 000 | .000 | .000 |

TABLE A.34 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 2020 | 277 | | | | | | | 048 | 000 | .000 | .000 |
| 2040 | 263 | | | | | | | 051 | 000 | .020 | .000 |
| 2100 | 273 | | | | | | | 051 | 000 | .000 | .000 |
| 2120 | | | | | | | | | | | |
| 2140 | 245 | | | | | | | | | | |
| 2200 | 253 | | | | | | | 053 | 000 | .029 | .000 |
| 2220 | 251 | | | | | | | 044 | 000 | .000 | .000 |
| 2240 | 260 | | | | | | | 056 | 000 | .000 | .000 |
| 2300 | 265 | | | | | | | 054 | 000 | .000 | .000 |
| 2320 | 268 | | | | | | | 057 | 000 | .000 | .000 |
| 2340 | 285 | | | | | | | 051 | 000 | .000 | .000 |
| 0000 | 301 | | | | | | | 052 | 000 | .000 | .000 |
| 0020 | 317 | | | | | | | 053 | 000 | .000 | .000 |
| 0040 | 359 | | | | | | | 051 | 000 | .000 | .000 |
| 0100 | 386 | | | | | | | 049 | 000 | .000 | .000 |
| 0120 | | | | | | | | 040 | .017 | .003 | .000 |
| 0140 | | | | | | | | | | | .000 |
| 0200 | | | | | | | | | | | .000 |
| 0220 | 396 | | | | | | | | | | .000 |
| 0240 | 310 | | | | | | | | | | .000 |
| 0300 | 317 | | | | | | | 051 | 000 | .002 | .000 |
| 0320 | 309 | | | | | | | 041 | .019 | .006 | .000 |
| 0340 | 311 | | | | | | | 052 | 000 | .006 | .000 |
| 0400 | 314 | | | | | | | 051 | 000 | .014 | .000 |
| 0420 | 319 | | | | | | | 042 | 000 | .030 | .000 |
| 0440 | | | | | | | | 040 | 000 | .020 | .000 |
| 0500 | 342 | | | | | | | 041 | 000 | .008 | .000 |
| 0520 | 338 | | | | | | | | | | .000 |
| 0540 | 362 | | | | | | | 040 | 000 | .012 | .000 |
| 0600 | 382 | | | | | | | 040 | 000 | .000 | .000 |
| 0620 | 400 | | | | | | | 040 | 000 | .000 | .000 |
| 0640 | 390 | | | | | | | 040 | 000 | .000 | .000 |
| 0700 | 379 | | | | | | | 040 | 000 | .000 | .000 |
| 0720 | 352 | | | | | | | 040 | 000 | .000 | .000 |
| 0740 | | | | | | | | 040 | 000 | .007 | .000 |
| 0800 | 292 | | | | | | | 040 | 000 | .038 | .000 |

TABLE A.35 CANTON TO WAKE, CHECK MATE

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|------|-----------|--------------|-----------------|
| 0820 | 361 | | | | | | | 040 | 000 | .027 | .000 | |
| 0840 | 458 | | | | | | | 041 | 000 | .025 | .000 | |
| 0900 | 432 | | | | | | | 057 | .147 | .011 | .000 | |
| 0920 | | | | | | | | | 000 | .019 | .000 | |
| 0940 | 393 | | | | | | | 165 | 000 | .046 | .000 | |
| 1000 | 381 | | | | | | | 162 | 000 | .079 | .000 | |
| 1020 | 357 | | | | | | | 169 | 000 | .090 | .000 | |
| 1040 | 366 | | | | | | | 172 | 000 | .145 | .000 | |
| 1100 | 371 | | | | | | | 094 | 000 | .130 | .271 | |
| 1120 | 351 | | | | | | | 086 | .268 | .160 | .000 | |
| 1140 | 340 | | | | | | | 117 | .080 | .114 | .000 | |
| 1200 | 317 | | | | | | | 139 | .098 | .096 | .017 | |
| 1220 | 316 | | | | | | | 122 | .063 | .058 | .040 | |
| 1240 | 312 | | | | | | | | | | .047 | |
| 1300 | 311 | | | | | | | | | | .039 | |
| 1320 | | | | | | | | | | | .055 | |
| 1340 | 279 | | | | | | | 132 | .463 | .016 | .097 | |
| 1400 | 198 | | | | | | | 111 | .184 | .070 | .000 | |
| 1420 | 197 | | | | | | | 134 | .111 | .069 | .000 | |
| 1440 | 199 | | | | | | | 113 | .116 | .037 | .000 | |
| 1500 | 199 | | | | | | | 124 | .267 | .219 | .000 | |
| 1520 | 178 | | | | | | | 118 | .417 | .009 | .000 | |
| 1540 | 128 | | | | | | | 111 | 000 | .091 | .071 | |
| 1600 | 111 | | | | | | | 091 | .500 | .108 | .058 | |
| 1620 | 096 | | | | | | | 075 | .429 | .048 | .079 | |
| 1640 | 143 | | | | | | | 057 | .302 | .048 | .000 | |
| 1700 | | | | | | | | | 000 | .100 | .000 | |
| 1720 | 099 | | | | | | | 080 | 000 | .171 | .000 | |
| 1740 | 110 | | | | | | | 084 | .198 | .120 | .000 | |
| 1800 | 215 | | | | | | | 114 | .107 | .148 | .224 | |
| 1840 | 255 | | | | | | | 124 | 000 | .000 | .000 | |
| 1900 | 297 | | | | | | | 124 | 000 | .000 | .000 | |
| 1920 | 326 | | | | | | | 122 | 000 | .000 | .000 | |
| 1940 | 326 | | | | | | | 124 | .035 | .000 | .000 | |
| 2000 | 323 | | | | | | | 123 | 000 | .000 | .000 | |

TABLE A.35 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BMGD AVERAGE | SINGLE BMGD DAY |
|------|-----|---------------------|--|--|--|---------|---------|-----|-----------|--------------|-----------------|
| 2020 | 324 | | | | | | | 112 | 000 | .000 | .000 |
| 2040 | 308 | | | | | | | 134 | 000 | .009 | .000 |
| 2100 | 319 | | | | | | | 100 | 000 | .009 | .000 |
| 2120 | 314 | | | | | | | 114 | 000 | .000 | .000 |
| 2140 | 311 | | | | | | | 107 | 000 | .000 | .000 |
| 2200 | 312 | | | | | | | 118 | 000 | .052 | .104 |
| 2220 | 303 | | | | | | | 142 | 000 | .000 | .000 |
| 2240 | 291 | | | | | | | 165 | 000 | .000 | .000 |
| 2300 | 281 | | | | | | | 133 | 000 | .000 | .000 |
| 2320 | 285 | | | | | | | 222 | 000 | .004 | .000 |
| 2340 | 295 | | | | | | | 165 | 000 | .000 | .000 |
| 0000 | 309 | | | | | 207-195 | | 133 | 000 | .018 | .000 |
| 0020 | 318 | | | | | | | 165 | 000 | .000 | .000 |
| 0040 | 317 | | | | | | | 222 | 000 | .000 | .000 |
| 0100 | | | | | | | | 157 | 000 | .000 | .000 |
| 0120 | | | | | | | | | | .000 | .000 |
| 0140 | 335 | | | | | | | 159 | 000 | .000 | .000 |
| 0200 | 330 | | | | | | | 162 | 000 | .004 | .000 |
| 0220 | 350 | | | | | | | 076 | 000 | .000 | .000 |
| 0240 | 361 | | | | | | | 116 | 000 | .017 | .000 |
| 0300 | 351 | | | | | | | 142 | 000 | .000 | .000 |
| 0320 | 350 | | | | | | | 122 | 000 | .000 | .000 |
| 0340 | 359 | | | | | | | 121 | 000 | .003 | .000 |
| 0400 | 370 | | | | | | | 111 | 000 | .007 | .000 |
| 0420 | 369 | | | | | | | 112 | 000 | .034 | .000 |
| 0440 | 373 | | | | | | | 115 | 000 | .057 | .000 |
| 0500 | 364 | | | | | 306-277 | | 089 | 000 | .193 | .081 |
| 0520 | 370 | | | | | 300-276 | | 078 | 000 | .082 | .150 |
| 0540 | 388 | | | | | 305-269 | | 076 | 000 | .006 | .000 |
| 0600 | 389 | | | | | 313-273 | | 078 | 000 | .015 | .000 |
| 0620 | | | | | | | | | | .000 | .000 |
| 0640 | | | | | | | | | | .000 | .000 |
| 0700 | 370 | | | | | | | 049 | 000 | .087 | .000 |
| 0720 | 350 | | | | | | | 044 | 000 | .036 | .000 |
| 0740 | 366 | | | | | | | 040 | 000 | .075 | .000 |
| 0800 | 407 | | | | | | 062-051 | 044 | 000 | .057 | .070 |

TABLE A.36 CANTON TO VITI LEVU, CHECK MATE

0830 GMT 20 OCT.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|-----|-----------|--------------|-----------------|
| 0820 | | | | | | | | | .000 | |
| 0840 | 510 | | | | | | 041 | .021 | .106 | |
| 0900 | 642 | | | | | | 040 | .022 | .110 | |
| 0920 | 635 | | | | | | 039 | .039 | .067 | |
| 0940 | 639 | | | | | | 042 | .039 | .102 | |
| 1000 | 634 | | | | | | 041 | .135 | .270 | |
| 1020 | 633 | | | | | | 041 | .068 | .000 | |
| 1040 | 627 | | | | | | 041 | .000 | .000 | |
| 1100 | 633 | | | | | | 041 | .000 | .000 | |
| 1120 | 640 | | | | | | 040 | .009 | .047 | |
| 1140 | 575 | | | | | | 040 | .000 | .000 | |
| 1200 | 543 | | | | | | 040 | .000 | .000 | |
| 1220 | 466 | | | | | | 040 | .000 | .000 | |
| 1240 | 394 | | | | | | 040 | .013 | .000 | |
| 1300 | 395 | | | | | | 040 | .028 | .056 | |
| 1320 | 347 | | | | | | 041 | .050 | .087 | |
| 1340 | | | | | | | | .144 | .144 | |
| 1400 | 274 | | | | | | 041 | .026 | .106 | |
| 1420 | 266 | | | | | | 041 | .028 | .033 | |
| 1440 | 250 | | | | | | 040 | .009 | .014 | |
| 1500 | 227 | | | | | | 040 | .034 | .136 | |
| 1520 | 227 | | | | | | 040 | .078 | .188 | |
| 1540 | | | | | | | | .000 | .000 | |
| 1600 | | | | | | | | .237 | .237 | |
| 1620 | 129 | | | | | | 040 | .045 | .128 | |
| 1640 | 120 | | | | | | 040 | .007 | .022 | |
| 1700 | 124 | | | | | | 040 | .085 | .187 | |
| 1720 | | | | | | | | .129 | .129 | |
| 1740 | 161 | | | | | | 040 | .053 | .101 | |
| 1800 | 174 | | | | | | 040 | .034 | .046 | |
| 1820 | 213 | | | | | | 041 | .000 | .000 | |
| 1840 | 270 | | | | | | 040 | .028 | .050 | |
| 1900 | | | | | | | | .027 | .027 | |
| 1920 | 246 | | | | | | 040 | .025 | .098 | |
| 1940 | 222 | | | | | | 040 | .004 | .017 | |
| 2000 | 223 | | | | | | 040 | .018 | .072 | |

TABLE A.36 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SMALL |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-------|
| 2020 | 226 | | | | | | | 039 | 000 | .000 | .000 |
| 2040 | 233 | | | | | | | 040 | 000 | .000 | .000 |
| 2100 | | | | | | | | | | | .000 |
| 2120 | | | | | | | | | | | .000 |
| 2140 | | | | | | | | | | | .000 |
| 2200 | | | | | | | | | | | .000 |
| 2240 | | | | | | | | | | | .000 |
| 2300 | 283 | | | | | | | 040 | 000 | .000 | .000 |
| 2320 | 286 | | | | | | | 040 | 000 | .000 | .000 |
| 2340 | 283 | | | | | | | 040 | 000 | .000 | .000 |
| 0000 | | | | | | | | | | | .000 |
| 0020 | 297 | | | | | | | 040 | 000 | .000 | .000 |
| 0040 | 301 | | | | | | | 040 | 000 | .000 | .000 |
| 0100 | 310 | | | | | | | 040 | 000 | .000 | .000 |
| 0120 | 310 | | | | | | | 040 | 000 | .000 | .000 |
| 0140 | 308 | | | | | | | 040 | 000 | .000 | .000 |
| 0200 | 319 | | | | | | | 040 | 000 | .000 | .000 |
| 0220 | 363 | | | | | | | 040 | 000 | .000 | .000 |
| 0240 | 322 | | | | | | | 040 | 000 | .000 | .000 |
| 0300 | 327 | | | | | | | 040 | 000 | .000 | .000 |
| 0320 | | | | | | | | | | | .000 |
| 0340 | 300 | | | | | | | 040 | 000 | .000 | .000 |
| 0400 | 288 | | | | | | | 040 | 000 | .000 | .000 |
| 0420 | 281 | | | | | | | 040 | 000 | .000 | .000 |
| 0440 | 268 | | | | | | | 040 | 000 | .000 | .000 |
| 0500 | 259 | | | | | | | 040 | 000 | .000 | .000 |
| 0520 | 233 | | | | | | | 040 | 000 | .000 | .000 |
| 0540 | 239 | | | | | | | 040 | 000 | .000 | .000 |
| 0600 | 230 | | | | | | | 040 | 000 | .000 | .000 |
| 0620 | | | | | | | | | | | .000 |
| 0640 | | | | | | | | | | | .000 |
| 0700 | | | | | | | | | | | .215 |
| 0720 | | | | | | | | | | | .019 |
| 0740 | | | | | | | | | | | .033 |
| 0800 | | | | | | | | | | | .041 |

TABLE A.37 CANTON TO TUTUILA, CHECK MATE

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|---------|--|-----|-----------|--------------|-----------------|
| 0820 | | | | | | | | | | .000 | |
| 0840 | 636 | | | | | | | 041 | .041 | .045 | |
| 0900 | | | | | | | | | | .056 | |
| 0920 | 640 | | | | | | | | .066 | .000 | |
| 0940 | | | | | | | | | | .046 | |
| 1000 | | | | | | | | | | .052 | |
| 1040 | 640 | | | | | | | 040 | .028 | .000 | |
| 1100 | 640 | | | | | | | 040 | .011 | .043 | |
| 1120 | 543 | | | | | | | 040 | .050 | .000 | |
| 1140 | 467 | | | | | | | 040 | .008 | .034 | |
| 1200 | 420 | | | | | | | 041 | .010 | .041 | |
| 1220 | 343 | | | | | | | 041 | .000 | .000 | |
| 1240 | 307 | | | | | | | 041 | .059 | .104 | |
| 1300 | 314 | | | | | | | 042 | .024 | .121 | |
| 1320 | 298 | | | | | | | 041 | .074 | .000 | |
| 1340 | 251 | | | | | | | 041 | .027 | .080 | |
| 1400 | 310 | | | | | | | 042 | .021 | .000 | |
| 1420 | 269 | | | | | | | 042 | .087 | .179 | |
| 1440 | 269 | | | | | | | 042 | .043 | .054 | |
| 1500 | 304 | | | | | | | 042 | .075 | .000 | |
| 1520 | | | | | | | | 042 | .049 | .000 | |
| 1540 | 272 | | | | | 245-154 | | 040 | .114 | .000 | |
| 1600 | 269 | | | | | 221-133 | | 040 | .163 | .343 | |
| 1620 | 303 | | | | | 256-122 | | 040 | .010 | .385 | |
| 1640 | 263 | | | | | 219-195 | | 040 | .000 | .029 | |
| 1700 | 254 | | | | | 180-174 | | 040 | .000 | .000 | |
| 1720 | 255 | | | | | 244-197 | | 040 | .000 | .000 | |
| 1740 | 233 | | | | | 221-195 | | 040 | .000 | .000 | |
| 1800 | 260 | | | | | 244-236 | | 040 | .131 | .036 | |
| 1820 | | | | | | 183-147 | | 040 | .055 | .000 | |
| 1840 | 246 | | | | | | | 042 | .000 | .000 | |
| 1900 | 208 | | | | | | | 040 | .000 | .000 | |
| 1920 | 214 | | | | | | | 040 | .012 | .000 | |
| 1940 | 235 | | | | | | | 040 | .000 | .000 | |
| 2000 | 239 | | | | | 221-214 | | 040 | .045 | .000 | |
| | | | | | | | | 040 | .000 | .000 | |

0830 OCT 20 057.

TABLE A.38 CANTON TO RAROTONGA, CHECK MATE

| TIME | MOF | GAPS IN MF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--------------------|-------------------------------|--------------------|--------------------|------------------------------------------|------------------------------------------|-----|-----------|--------------|-----------------|
| | | 493-466 498-466 | 430-395 339-322 | 339-308 142-147 165-155 | 294-273 143-115 | 110-095 106-095 | 160-126 100-086 107-091 107-093 | 084-075 076-070 075-071 065-060 | | | | |
| 0820 | 286 | | | | | | | | 046 | .104 | .056 | .000 |
| 0840 | 266 | | | | | | | | 044 | .063 | .144 | .000 |
| 0900 | | | | | | | | | | | | .000 |
| 0920 | 530 | | | | | | | | 041 | .350 | .073 | .000 |
| 0940 | 522 | | | | | | | | 042 | .185 | .141 | .000 |
| 1000 | 532 | | | | | | | | 075 | .057 | .083 | .000 |
| 1020 | 514 | | | | | | | | 063 | .032 | .130 | .000 |
| 1040 | 529 | | | | | | | | 045 | .184 | .192 | .000 |
| 1100 | | | | | | | | | | | | .000 |
| 1120 | 542 | | | | | | | | 043 | .056 | .074 | .000 |
| 1140 | 536 | | | | | | | | 045 | .047 | .137 | .000 |
| 1200 | 567 | | | | | | | | 045 | .044 | .116 | .000 |
| 1220 | 541 | | | | | | | | 043 | .018 | .120 | .000 |
| 1240 | | | | | | | | | | | | .000 |
| 1300 | 457 | | | | | | | | 041 | .024 | .266 | .000 |
| 1320 | 368 | | | | | | | | 042 | .043 | .374 | .185 |
| 1340 | 348 | | | | | | | | 043 | .013 | .179 | .355 |
| 1400 | 327 | | | | | | | | 042 | .000 | .338 | .659 |
| 1420 | 297 | | | | | | | | 040 | .000 | .224 | .171 |
| 1440 | 268 | | | | | | | | 043 | .036 | .408 | .329 |
| 1500 | 263 | | | | | | | | 040 | .018 | .321 | .218 |
| 1520 | 258 | | | | | | | | 040 | .073 | .183 | .325 |
| 1540 | 248 | | | | | | | | 043 | .068 | .191 | .000 |
| 1600 | 231 | | | | | | | | 044 | .048 | .215 | .080 |
| 1620 | 213 | | | | | | | | 043 | .059 | .225 | .286 |
| 1640 | 215 | | | | | | | | 042 | .197 | .170 | .364 |
| 1700 | 209 | | | | | | | | 042 | .084 | .152 | .208 |
| 1720 | 232 | | | | | | | | 054 | .141 | .052 | .270 |
| 1740 | 251 | | | | | | | | 040 | .062 | .044 | .077 |
| 1800 | 269 | | | | | | | | 043 | .071 | .013 | .089 |
| 1820 | 267 | | | | | | | | 053 | .061 | .000 | .039 |
| 1840 | 287 | | | | | | | | 052 | .051 | .000 | .000 |
| 1900 | 292 | | | | | | | | 000 | .000 | .000 | .000 |
| 1920 | 306 | | | | | | | | 044 | .000 | .000 | .000 |
| 1940 | 319 | | | | | | | | 042 | .000 | .000 | .000 |
| 2000 | 344 | | | 167-160 | | | | | 042 | .023 | .000 | .000 |

0830 GMT 20 OCT.

TABLE A.38 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|---------|--|-----|-----------|--------------|-----------------|
| 2020 | 344 | | | | | | | 041 | 000 | .000 | .000 |
| 2040 | 313 | | | | | | | 041 | 000 | .000 | .000 |
| 2100 | 294 | | | | | | | 041 | 000 | .000 | .000 |
| 2140 | 284 | | | | | | | 041 | 000 | .000 | .000 |
| 2200 | 295 | | | | | | | 042 | 000 | .000 | .000 |
| 2220 | 351 | | | | | | | 041 | 000 | .000 | .000 |
| 2240 | 325 | | | | | | | 040 | 000 | .000 | .000 |
| 2300 | 374 | | | | | | | 042 | 000 | .000 | .000 |
| 2320 | 446 | | | | | | | 040 | 000 | .000 | .000 |
| 2340 | 497 | | | | | | | 040 | 000 | .000 | .000 |
| 0000 | 484 | | | | | | | 044 | 000 | .000 | .000 |
| 0020 | 436 | | | | | | | 044 | 000 | .000 | .000 |
| 0040 | 448 | | | | | | | 040 | 000 | .000 | .000 |
| 0100 | | | | | | | | | | | |
| 0120 | | | | | | | | | | | |
| 0140 | | | | | | | | | | | |
| 0200 | 333 | | | | | | | 043 | 000 | .000 | .000 |
| 0220 | 331 | | | | | | | 044 | 000 | .085 | .000 |
| 0240 | 347 | | | | | | | 044 | 000 | .000 | .000 |
| 0300 | 357 | | | | | | | 044 | 000 | .003 | .000 |
| 0320 | 349 | | | | | | | 044 | 000 | .102 | .000 |
| 0340 | 342 | | | | | | | 044 | 000 | .006 | .000 |
| 0400 | 354 | | | | | | | 044 | 000 | .002 | .000 |
| 0420 | 347 | | | | | | | 054 | 000 | .029 | .034 |
| 0440 | 336 | | | | | | | 044 | 000 | .032 | .026 |
| 0500 | 335 | | | | | 074-071 | | 044 | .010 | .015 | .030 |
| 0520 | 333 | | | | | | | 045 | 000 | .020 | .040 |
| 0540 | 332 | | | | | | | 044 | 000 | .018 | .055 |
| 0600 | 333 | | | | | | | 043 | 000 | .000 | .000 |
| 0620 | 316 | | | | | | | 043 | 000 | .000 | .000 |
| 0640 | 319 | | | | | | | 043 | 000 | .014 | .000 |
| 0700 | 315 | | | | | 106-092 | | 043 | .021 | .028 | .000 |
| 0720 | 334 | | | | | 109-097 | | 045 | .044 | .068 | .122 |
| 0740 | | | | | | 103-091 | | 043 | .041 | .056 | .059 |
| 0800 | 306 | | | | | 109-097 | | 047 | .046 | .097 | .290 |

TABLE A.39 ROI-NAMUR TO TUTUILA, CHECK MATE

0830 GMT 20 OCT.

| TIME | MOF | GAPS IN MF SPECTRUM | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|---------|-----|-----------|--------------|-----------------|
| 0820 | 339 | | | | | 040 | 000 | .021 | .103 |
| 0840 | 358 | | | | | 040 | 000 | .012 | .000 |
| 0900 | 355 | | | | | 040 | 000 | .083 | .000 |
| 0920 | | | | | | | | | .000 |
| 0940 | 455 | | | | | 040 | 000 | .019 | .000 |
| 1000 | | | | | | | | | .000 |
| 1020 | 357 | | | | | 040 | 000 | .014 | .000 |
| 1040 | 361 | | | | | 041 | .047 | .008 | .000 |
| 1100 | 293 | | | | | 040 | 000 | .045 | .027 |
| 1120 | 337 | | | | 106-091 | 040 | 000 | .033 | .000 |
| 1140 | 349 | | | | | 041 | 000 | .027 | .000 |
| 1200 | 322 | | | | | 041 | 000 | .018 | .000 |
| 1220 | 332 | | | | | 041 | 000 | .048 | .019 |
| 1240 | 313 | | | | | 042 | 000 | .050 | .000 |
| 1300 | 307 | | | | | 042 | 000 | .029 | .000 |
| 1320 | 306 | | | | | 041 | 000 | .036 | .000 |
| 1340 | 302 | | | | | 042 | 000 | .089 | .147 |
| 1400 | 312 | | | | | 041 | 000 | .051 | .102 |
| 1420 | 308 | | | | | 042 | 000 | .000 | .000 |
| 1440 | 323 | | | | | 042 | 000 | .039 | .000 |
| 1500 | 305 | | | | | 042 | 000 | .000 | .000 |
| 1520 | | | | | | | | | .133 |
| 1540 | 266 | | | | | 042 | 000 | .044 | .088 |
| 1600 | 255 | | | | | 042 | .066 | .048 | .037 |
| 1620 | 215 | | | | | 040 | 000 | .006 | .012 |
| 1640 | 203 | | | | | 040 | 000 | .028 | .000 |
| 1700 | 204 | | | | | 040 | 000 | .000 | .000 |
| 1720 | 158 | | | | | 040 | 000 | .064 | .000 |
| 1740 | 197 | | | | | 042 | 000 | .025 | .000 |
| 1800 | 226 | | | | | 042 | 000 | .038 | .000 |
| 1820 | 282 | | | | | 048 | 000 | .062 | .000 |
| 1840 | 244 | | | | | 048 | 000 | .187 | .000 |
| 1900 | 247 | | | | | 051 | 000 | .083 | .000 |
| 1920 | 266 | | | | | 052 | 000 | .009 | .000 |
| 1940 | 275 | | | | 071-070 | 054 | .005 | .000 | .000 |
| 2000 | 261 | | | | 071-069 | 054 | 000 | .000 | .000 |

TABLE A.39 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE DAY | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|--|-----|-----------|------------------|-----------------|
| 2020 | 248 | | | | | | | | 053 | 000 | .000 | .000 |
| 2040 | 248 | | | | | | | | 055 | 000 | .000 | .000 |
| 2100 | 245 | | | | | | | | 051 | 000 | .000 | .000 |
| 2120 | 243 | | | | | | | | 059 | 000 | .014 | .032 |
| 2140 | 250 | | | | | | | | 057 | 000 | .101 | .000 |
| 2200 | 251 | | | | | | | | 062 | .053 | .000 | .000 |
| 2240 | 261 | | | | | | | | 071 | 000 | .000 | .000 |
| 2300 | 267 | | | | | | | | 073 | 000 | .000 | .000 |
| 2320 | 269 | | | | | | | | 082 | .037 | .000 | .000 |
| 2340 | 282 | | | | | | | | 072 | 000 | .000 | .000 |
| 0000 | 292 | | | | | | | | 073 | .014 | .025 | .000 |
| 0020 | 300 | | | | | | | | 074 | 000 | .028 | .008 |
| 0040 | 311 | | | | | | | | 073 | 000 | .003 | .000 |
| 0100 | 315 | | | | | | | | 073 | 000 | .004 | .000 |
| 0120 | 332 | | | | | | | | 065 | 000 | .000 | .000 |
| 0140 | 346 | | | | | | | | 067 | 000 | .001 | .000 |
| 0200 | 357 | | | | | | | | 067 | 000 | .005 | .000 |
| 0220 | 352 | | | | | | | | 067 | 000 | .004 | .000 |
| 0240 | 378 | | | | | | | | 066 | 000 | .002 | .000 |
| 0300 | 371 | | | | | | | | | | .000 | .000 |
| 0320 | | | | | | | | | | | .000 | .000 |
| 0340 | | | | | | | | | | | .000 | .000 |
| 0400 | | | | | | | | | | | .000 | .000 |
| 0420 | | | | | | | | | | | .000 | .000 |
| 0440 | | | | | | | | | | | .000 | .000 |
| 0500 | | | | | | | | | | | .000 | .000 |
| 0520 | | | | | | | | | | | .000 | .000 |
| 0540 | | | | | | | | | | | .000 | .000 |
| 0600 | | | | | | | | | | | .000 | .000 |
| 0620 | | | | | | | | | | | .000 | .000 |
| 0640 | | | | | | | | | | | .000 | .000 |
| 0700 | | | | | | | | | | | .000 | .000 |
| 0720 | | | | | | | | | | | .000 | .000 |
| 0740 | | | | | | | | | | | .092 | .000 |
| 0800 | | | | | | | | | | | .000 | .000 |

TABLE A.40 ROI-NAMUR TO VITI LEVU, CHECK MATE

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0820 | | | | | | | | | | .026 | |
| 0840 | 280 | | | | | | | 041 | 000 | .032 | |
| 0900 | 277 | | | | | | | 040 | 000 | .000 | |
| 0920 | 291 | | | | | | | 041 | 000 | .064 | |
| 0940 | 333 | | | | | | | 041 | 000 | .000 | |
| 1000 | 339 | | | | | | | 041 | 000 | .075 | |
| 1020 | 349 | | | | | | | 041 | 000 | .089 | |
| 1040 | 389 | | | | | | | 041 | 000 | .000 | |
| 1100 | 407 | | | | | | | 041 | 000 | .011 | |
| 1120 | 462 | | | | | | | 040 | 000 | .023 | |
| 1140 | 399 | | | | | | | 040 | 000 | .003 | |
| 1200 | 475 | | | | | | | 040 | 000 | .031 | |
| 1220 | 473 | | | | | | | 040 | 000 | .016 | |
| 1240 | 487 | | | | | | | 040 | 000 | .066 | |
| 1300 | 472 | | | | | | | 040 | 000 | .011 | |
| 1320 | | | | | | | | 040 | 000 | .122 | |
| 1340 | 432 | | | | | | | 040 | 000 | .000 | |
| 1400 | 419 | | | | | | | 042 | 000 | .097 | |
| 1420 | 419 | | | | | | | 041 | 000 | .100 | |
| 1440 | 354 | | | | | | | 041 | 000 | .017 | |
| 1500 | 321 | | | | | | | 041 | 000 | .043 | |
| 1520 | | | | | | | | 040 | 000 | .037 | |
| 1540 | 290 | | | | | | | 040 | 000 | .088 | |
| 1600 | 238 | | | | | | | 041 | 000 | .043 | |
| 1620 | 231 | | | | | | | 041 | 000 | .074 | |
| 1640 | 209 | | | | | | | 040 | 000 | .053 | |
| 1700 | 190 | | | | | | | 040 | 000 | .102 | |
| 1720 | 193 | | | | | | | 040 | 000 | .031 | |
| 1740 | 201 | | | | | | | 040 | 000 | .015 | |
| 1800 | 225 | | | | | | | 040 | 000 | .046 | |
| 1820 | 179 | | | | | | | 040 | 000 | .124 | |
| 1840 | 252 | | | | | | | 040 | 000 | .144 | |
| 1900 | 268 | | | | | | | 040 | 000 | .128 | |
| 1920 | | | | | | | | 040 | 000 | .107 | |
| 1940 | | | | | | | | 040 | 000 | .159 | |
| 2000 | | | | | | | | 040 | 000 | .119 | |
| | | | | | | | | 040 | 000 | .122 | |
| | | | | | | | | 040 | 000 | .057 | |
| | | | | | | | | 040 | 000 | .106 | |
| | | | | | | | | 040 | 000 | .063 | |
| | | | | | | | | 040 | 000 | .118 | |
| | | | | | | | | 040 | 000 | .095 | |
| | | | | | | | | 041 | 000 | .146 | |
| | | | | | | | | 040 | 000 | .140 | |
| | | | | | | | | 040 | 000 | .022 | |
| | | | | | | | | 040 | 000 | .023 | |
| | | | | | | | | 040 | 000 | .000 | |
| | | | | | | | | 040 | 000 | .000 | |
| | | | | | | | | 040 | 000 | .000 | |
| | | | | | | | | 040 | 000 | .000 | |

0830 OCT 20 OCT.

TABLE A.40 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | 8KGD AVERAGE | SINGLE 8KGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 2020 | | | | | | | | | | | .000 |
| 2040 | 272 | | | | | | | 040 | 000 | .003 | .000 |
| 2100 | | | | | | | | | | | .000 |
| 2120 | | | | | | | | | | | .000 |
| 2140 | | | | | | | | | | | .000 |
| 2200 | | | | | | | | | | | .000 |
| 2220 | | | | | | | | | | | .034 |
| 2240 | | | | | | | | | | | .014 |
| 2300 | 299 | | | | | | | 056 | 000 | .000 | .000 |
| 2320 | 332 | | | | | | | 054 | 000 | .000 | .000 |
| 2340 | 343 | | | | | | | 055 | 000 | .000 | .000 |
| 0000 | 350 | | | | | | | 052 | 000 | .000 | .000 |
| 0020 | 366 | | | | | | | 056 | 000 | .000 | .000 |
| 0040 | | | | | | | | | | | .000 |
| 0100 | | | | | | | | | | | .000 |
| 0120 | | | | | | | | | | | .000 |
| 0140 | | | | | | | | | | | .000 |
| 0200 | | | | | | | | | | | .000 |
| 0220 | | | | | | | | | | | .000 |
| 0240 | | | | | | | | | | | .000 |
| 0300 | | | | | | | | | | | .000 |
| 0320 | | | | | | | | | | | .000 |
| 0340 | 346 | | | | | | | 040 | 000 | .000 | .000 |
| 0400 | 334 | | | | | | | 040 | 000 | .000 | .000 |
| 0420 | 339 | | | | | | | 040 | 000 | .000 | .000 |
| 0440 | 333 | | | | | | | 040 | 000 | .000 | .000 |
| 0500 | 323 | | | | | | | 040 | 000 | .008 | .000 |
| 0520 | 297 | | | | | | | 040 | 000 | .000 | .000 |
| 0540 | 283 | | | | | | | 040 | 000 | .000 | .000 |
| 0600 | 289 | | | | | | | 040 | 000 | .000 | .000 |
| 0620 | | | | | | | | 040 | 000 | .000 | .000 |
| 0640 | | | | | | | | | | | .000 |
| 0700 | | | | | | | | | | | .000 |
| 0720 | | | | | | | | | | | .000 |
| 0740 | | | | | | | | | | | .000 |
| 0800 | | | | | | | | | | | .155 |

TABLE A.41 ROI-NAMUR TO RAROTONGA, CHECK MATE

0630 OCT 20 OCT.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | OMGO AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|---------|---------|---------|---------|-----|-----------|--------------|-----------------|
| 0820 | 289 | 309-275 | 174-153 | 148-128 | 106-097 | 066-062 | 065-061 | 044 | .102 | .078 | .179 |
| 0840 | 333 | | 159-152 | | 106-094 | 086-079 | | 046 | .272 | .272 | .385 |
| 0900 | 277 | | | | 157-094 | 084-060 | | 041 | .153 | .176 | .140 |
| 0920 | 263 | | 160-135 | 123-117 | 110-096 | 083-078 | 062-059 | 040 | .305 | .095 | .109 |
| 0940 | 285 | | 160-135 | 123-117 | 104-092 | 075-071 | | 040 | .227 | .173 | .056 |
| 1000 | 247 | | 159-147 | 139-135 | 123-118 | | | 061 | .215 | .110 | .075 |
| 1020 | 257 | | | | | 076-068 | | 085 | .122 | .048 | .048 |
| 1040 | 257 | | | | | | 051-047 | 044 | .056 | .087 | .040 |
| 1100 | | | | | | | | | | | .101 |
| 1120 | 294 | | | 123-116 | 074-070 | | 062-058 | 045 | .060 | .079 | .138 |
| 1140 | 294 | | 160-142 | | 105-097 | | | 062 | .095 | .132 | .097 |
| 1200 | 270 | | | 122-115 | 099-089 | 076-069 | | 064 | .039 | .055 | .090 |
| 1220 | 288 | | | | | | | 062 | .106 | .072 | .062 |
| 1240 | | | | | | | | | | | .134 |
| 1300 | 321 | | | | 103-091 | | | 063 | .047 | .212 | .187 |
| 1320 | 283 | | | | | | | 041 | .000 | .136 | .082 |
| 1340 | 279 | | | | | | | 042 | .025 | .131 | .189 |
| 1400 | 288 | | | | | 063-060 | 055-051 | 044 | .029 | .161 | .192 |
| 1420 | 267 | | | | | 080-069 | 063-059 | 044 | .099 | .156 | .156 |
| 1440 | 230 | | | | | | | 045 | .038 | .167 | .136 |
| 1500 | 216 | | | | | | | 045 | .029 | .232 | .229 |
| 1520 | 211 | | | | | | | 042 | .048 | .328 | .296 |
| 1540 | 218 | | | | | 064-062 | 063-059 | 046 | .041 | .400 | .198 |
| 1600 | 235 | | | | | 064-061 | 054-051 | 046 | .042 | .200 | .158 |
| 1620 | 193 | | | | | 065-061 | 054-052 | 046 | .129 | .109 | .108 |
| 1640 | 221 | 210-201 | 159-145 | | 074-072 | 072-069 | | 045 | .093 | .093 | .022 |
| 1700 | 190 | | | 123-118 | 074-071 | 073-069 | | 045 | .048 | .044 | .021 |
| 1720 | 171 | | | | 074-071 | | 061-058 | 052 | .067 | .097 | .000 |
| 1740 | 174 | | | | | | 061-058 | 052 | .025 | .009 | .018 |
| 1800 | 268 | | | | | | | 055 | .209 | .009 | .000 |
| 1820 | 278 | 253-238 | 223-197 | | 072-070 | | | 062 | .000 | .057 | .000 |
| 1840 | 286 | | | | | | | 074 | .000 | .000 | .000 |
| 1900 | 309 | | | | | 071-069 | | 074 | .008 | .000 | .000 |
| 1920 | 302 | | | | | | | 065 | .008 | .028 | .000 |
| 1940 | 316 | | 167-160 | | | | | 084 | .000 | .094 | .061 |
| 2000 | 333 | | | | | 072-069 | | 067 | .029 | .004 | .000 |
| | | | | | | | | | .011 | .003 | .000 |

TABLE A.41 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | SKGD AVERAGE | SINGLE SKGD DAY |
|------|-----|---------------------|--|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 2020 | 356 | | | | | | | | 064 | 000 | .003 | .000 |
| 2040 | 321 | | | | | | | | 071 | 000 | .000 | .000 |
| 2120 | 351 | | | | | | | | 072 | 000 | .033 | .100 |
| 2140 | 337 | | | | | | | | 076 | .023 | .098 | .000 |
| 2200 | 327 | | | | | | | | 076 | .036 | .081 | .044 |
| 2220 | 311 | | | | | | | | 077 | .047 | .095 | .190 |
| 2240 | 318 | | | | | | | | 082 | 000 | .061 | .056 |
| 2300 | 324 | | | | | | | | 111 | 000 | .000 | .000 |
| 2320 | 381 | | | | | | | | 078 | 000 | .051 | .000 |
| 2340 | 399 | | | | | | | | 077 | 000 | .000 | .000 |
| 0000 | 411 | | | | | | | | 108 | 000 | .000 | .000 |
| 0020 | 421 | | | | | | | | 103 | .016 | .136 | .000 |
| 0040 | 418 | | | | | | | | 107 | .026 | .049 | .000 |
| 0100 | | | | | | | | | | | .024 | .000 |
| 0120 | | | | | | | | | | | .000 | .000 |
| 0140 | 399 | | | | | | | | 073 | .058 | .154 | .000 |
| 0200 | 413 | | | | | | | | 110 | .069 | .070 | .000 |
| 0220 | 449 | | | | | | | | 108 | 000 | .046 | .000 |
| 0240 | 432 | | | | | | | | 107 | 000 | .179 | .115 |
| 0300 | 455 | | | | | | | | 110 | .043 | .098 | .106 |
| 0320 | 401 | | | | | | | | 111 | 000 | .009 | .000 |
| 0340 | 343 | | | | | | | | 105 | .097 | .044 | .039 |
| 0400 | 346 | | | | | | | | 088 | 000 | .028 | .065 |
| 0420 | 309 | | | | | | | | 103 | 000 | .013 | .000 |
| 0440 | 346 | | | | | | | | 072 | .022 | .047 | .113 |
| 0500 | 330 | | | | | | | | 075 | .024 | .053 | .031 |
| 0520 | 312 | | | | | | | | 064 | 000 | .028 | .041 |
| 0540 | 313 | | | | | | | | 057 | 000 | .078 | .034 |
| 0600 | 308 | | | | | | | | 056 | 000 | .015 | .000 |
| 0620 | 331 | | | | | | | | 046 | 000 | .024 | .000 |
| 0640 | 328 | | | | | | | | 044 | 000 | .024 | .000 |
| 0700 | 316 | | | | | | | | 045 | 000 | .081 | .000 |
| 0720 | 308 | | | | | | | | 047 | 000 | .029 | .098 |
| 0740 | | | | | | | | | | 000 | .076 | .046 |
| 0800 | 275 | | | | | | | | 048 | 000 | .126 | .347 |

TABLE A.42 ROI-NAMUR TO MIDWAY, CHECK MATE

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|--|--|--|-----|-----------|--------------|-----------------|
| 0820 | 228 | | | | | | | 043 | .011 | .041 | .000 |
| 0840 | 284 | | | | | | | 040 | .000 | .022 | .000 |
| 0900 | 261 | | | | | | | 040 | .000 | .011 | .000 |
| 0920 | 264 | | | | | | | 044 | .014 | .029 | .000 |
| 0940 | 275 | | | 075-072 | | | | 040 | .000 | .019 | .000 |
| 1000 | 283 | | | 092-093 | | | | 041 | .025 | .006 | .000 |
| 1020 | 297 | | | 089-084 | | | | 041 | .020 | .013 | .000 |
| 1040 | 317 | | | | | | | 041 | .000 | .000 | .000 |
| 1100 | 306 | | | | | | | 040 | .015 | .020 | .000 |
| 1120 | 316 | | | 089-085 | | | | 040 | .007 | .014 | .000 |
| 1140 | 304 | | | 076-074 | | | | 040 | .011 | .006 | .000 |
| 1200 | 314 | | | | | | | 051 | .000 | .000 | .000 |
| 1220 | 317 | | | | | | | 051 | .000 | .009 | .000 |
| 1240 | 322 | | | | | | | 048 | .000 | .000 | .000 |
| 1300 | 314 | | | | | | | 048 | .000 | .000 | .000 |
| 1320 | 319 | | | | | | | 048 | .000 | .000 | .000 |
| 1340 | | | | | | | | 048 | .000 | .055 | .143 |
| 1400 | 327 | | | | | | | 041 | .010 | .090 | .097 |
| 1420 | 294 | | | | | | | 050 | .000 | .149 | .149 |
| 1440 | 298 | | | | | | | 049 | .000 | .042 | .037 |
| 1500 | 290 | | | | | | | 049 | .000 | .051 | .054 |
| 1520 | 224 | | | | | | | 045 | .000 | .064 | .020 |
| 1540 | 162 | | | | | | | 049 | .000 | .238 | .000 |
| 1600 | 138 | | | | | | | 049 | .000 | .102 | .109 |
| 1620 | 125 | | | | | | | 044 | .000 | .047 | .000 |
| 1640 | | | | | | | | 051 | .000 | .192 | .000 |
| 1700 | 108 | | | | | | | 041 | .000 | .140 | .079 |
| 1720 | 101 | | | | | | | 048 | .000 | .130 | .130 |
| 1740 | 099 | | | | | | | 042 | .000 | .132 | .106 |
| 1800 | 106 | | | | | | | 041 | .000 | .102 | .000 |
| 1820 | 129 | | | | | | | 041 | .000 | .000 | .000 |
| 1840 | 158 | | | | | | | 041 | .000 | .000 | .000 |
| 1900 | 226 | | | | | | | 045 | .000 | .011 | .021 |
| 1920 | | | | | | | | 045 | .000 | .054 | .018 |
| 1940 | 288 | | | | | | | 068 | .000 | .000 | .011 |
| 2000 | 331 | | | | | | | 057 | .000 | .021 | .000 |

0830 ONR 20 OCT.

TABLE A.42 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | EMGD AVERAGE | SINGLE EMGD DAY |
|------|-----|---------------------|--|--|---------|---------|--|-----|-----------|--------------|-----------------|
| 2020 | 330 | | | | | | | 057 | 000 | .003 | .003 |
| 2040 | 326 | | | | | | | 061 | 000 | .014 | .029 |
| 2100 | 343 | | | | | | | 052 | 000 | .008 | .016 |
| 2120 | 344 | | | | | | | 071 | 000 | .022 | .014 |
| 2140 | 368 | | | | | | | 070 | 000 | .013 | .000 |
| 2200 | 371 | | | | | | | 076 | 000 | .000 | .000 |
| 2220 | 380 | | | | | | | 066 | 000 | .000 | .000 |
| 2240 | 378 | | | | | | | 090 | 000 | .004 | .000 |
| 2300 | | | | | | | | | 000 | .000 | .000 |
| 2320 | 375 | | | | | | | 083 | 000 | .000 | .000 |
| 2340 | 372 | | | | | | | 080 | 000 | .009 | .017 |
| 0000 | 352 | | | | | | | 063 | 000 | .000 | .000 |
| 0020 | 351 | | | | | | | 081 | 000 | .005 | .016 |
| 0040 | 340 | | | | | | | 083 | 000 | .010 | .031 |
| 0100 | 363 | | | | | | | 076 | 000 | .009 | .013 |
| 0120 | 374 | | | | | | | 076 | 000 | .006 | .013 |
| 0140 | 396 | | | | | | | 070 | 000 | .000 | .000 |
| 0200 | 425 | | | | | | | 071 | 000 | .000 | .000 |
| 0220 | 420 | | | | | | | 069 | 000 | .010 | .000 |
| 0240 | 431 | | | | | | | 064 | 000 | .000 | .000 |
| 0300 | 425 | | | | | | | 059 | 000 | .004 | .000 |
| 0320 | 420 | | | | 144-138 | | | 065 | .017 | .003 | .008 |
| 0340 | 419 | | | | | | | 058 | 000 | .000 | .000 |
| 0400 | | | | | | | | | | .113 | .113 |
| 0420 | 359 | | | | | 102-098 | | 056 | .013 | .000 | .000 |
| 0440 | 354 | | | | | | | 055 | .010 | .003 | .009 |
| 0500 | | | | | | | | | | .000 | .000 |
| 0520 | 363 | | | | | 063-060 | | | 000 | .002 | .000 |
| 0540 | 333 | | | | | | | 040 | .017 | .003 | .000 |
| 0600 | 335 | | | | 186-178 | | | 040 | .044 | .005 | .007 |
| 0620 | 130 | | | | | | | 040 | .022 | .011 | .027 |
| 0640 | 280 | | | | 143-134 | | | 040 | .037 | .017 | .007 |
| 0700 | 260 | | | | | | | 040 | 000 | .003 | .000 |
| 0720 | | | | | | | | | | .019 | .019 |
| 0740 | | | | | | | | | | .000 | .000 |
| 0800 | 223 | | | | 176-170 | | | 040 | .033 | .031 | .017 |

TABLE A.43 KAUAI TO TUTUILA, CHECK MATE

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|--|--|-----|-----------|--------------|-----------------|
| | | | | | | | | | | | | | |
| 0820 | | | | | | | | | | | | | .000 |
| 0840 | | | | | | | | | | | | | .355 |
| 0900 | | | | | | | | | | | | | .537 |
| 0920 | | | | | | | | | | | | | .001 |
| 0940 | | | | | | | | | | | | | .415 |
| 1000 | | | | | | | | | | | | | .169 |
| 1020 | | | | | | | | | | | | | .115 |
| 1040 | | | | | | | | | | | | | .232 |
| 1100 | 276 | | | | | | | | | | | | .230 |
| 1120 | 279 | | | | | | | | | | | | .151 |
| 1140 | | | | | | | | | | | | | .599 |
| 1200 | | | | | | | | | | | | | .427 |
| 1240 | | | | | | | | | | | | | .497 |
| 1300 | | | | | | | | | | | | | .391 |
| 1320 | | | | | | | | | | | | | .261 |
| 1340 | | | | | | | | | | | | | .188 |
| 1400 | | | | | | | | | | | | | .125 |
| 1420 | | | | | | | | | | | | | .175 |
| 1440 | | | | | | | | | | | | | .333 |
| 1500 | | | | | | | | | | | | | .242 |
| 1520 | | | | | | | | | | | | | .100 |
| 1540 | | | | | | | | | | | | | .073 |
| 1600 | | | | | | | | | | | | | .000 |
| 1620 | 133 | | | | | | | | | | | | .000 |
| 1640 | 143 | | | | | | | | | | | | .000 |
| 1700 | 202 | | | | | | | | | | | | .048 |
| 1720 | 240 | | | | | | | | | | | | .030 |
| 1740 | | | | | | | | | | | | | .016 |
| 1800 | | | | | | | | | | | | | .000 |
| 1820 | | | | | | | | | | | | | .022 |
| 1840 | | | | | | | | | | | | | .000 |
| 1900 | | | | | | | | | | | | | .000 |
| 1920 | | | | | | | | | | | | | .024 |
| 1940 | 228 | | | | | | | | | | | | .028 |
| 2000 | 293 | | | | | | | | | | | | .000 |
| | | | | | | | | | | | | | .000 |

0830 GMT 20 OCT.

TABLE A.43 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|---------|--|--|-----|-----------|--------------|-----------------|
| 2020 | 306 | | | | | | | 062 | .094 | .000 | .000 |
| 2100 | 274 | | | | | | | 061 | .066 | .005 | .000 |
| 2120 | 274 | | | | | | | 053 | .027 | .000 | .000 |
| 2140 | 276 | | | | | | | 060 | .093 | .006 | .000 |
| 2200 | 280 | | | | | | | 063 | .037 | .029 | .000 |
| 2220 | 276 | 209-202 | | | | | | 068 | .192 | .051 | .000 |
| 2240 | 288 | 211-202 | | | | | | 062 | .146 | .000 | .000 |
| 2300 | 304 | 210-202 | | | | | | 062 | .050 | .000 | .000 |
| 2320 | 305 | 208-200 | | | | | | 061 | .033 | .000 | .000 |
| 2340 | 303 | 205-190 | | | | | | 065 | .122 | .000 | .000 |
| 0000 | 301 | | | | | | | 061 | .000 | .030 | .000 |
| 0020 | 315 | | | | | | | 169 | .000 | .000 | .000 |
| 0020 | 275 | | | | | | | 064 | .000 | .080 | .000 |
| 0040 | 252 | | | | | | | 063 | .000 | .023 | .000 |
| 0100 | 257 | | | | | | | 054 | .000 | .036 | .000 |
| 0120 | 302 | | | | | | | 055 | .077 | .002 | .000 |
| 0140 | 313 | 222-203 | | | | | | 054 | .108 | .026 | .000 |
| 0200 | 292 | 223-195 | | | | | | 050 | .132 | .040 | .000 |
| 0220 | 299 | 226-194 | | | | | | 054 | .188 | .028 | .000 |
| 0240 | 305 | 223-204 | | | 181-154 | | | 040 | .000 | .067 | .000 |
| 0300 | 296 | | | | 181-154 | | | 043 | .107 | .025 | .000 |
| 0320 | | | | | | | | | | .000 | .000 |
| 0340 | | | | | | | | | | .000 | .000 |
| 0400 | | | | | | | | | | .000 | .000 |
| 0420 | | | | | | | | | | .000 | .000 |
| 0440 | | | | | | | | | | .000 | .000 |
| 0500 | | | | | | | | | | .000 | .000 |
| 0520 | | | | | | | | | | .000 | .000 |
| 0540 | | | | | | | | | | .000 | .000 |
| 0600 | | | | | | | | | | .000 | .000 |
| 0620 | | | | | | | | | | .000 | .000 |
| 0640 | | | | | | | | | | .000 | .000 |
| 0700 | | | | | | | | | | .000 | .000 |
| 0720 | | | | | | | | | | .000 | .000 |
| 0740 | | | | | | | | | | .044 | .012 |
| 0800 | | | | | | | | | | .260 | .419 |

TABLE A.44 ROI-NAMUR TO PALO ALTO, CHECK MATE

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|---------|--|-----|------|-----------|--------------|-----------------|
| 0820 | 124 | | | 112-101 | | | 040 | .131 | .080 | .320 | |
| 0840 | | | | | | | | | | .540 | |
| 0900 | 120 | | | | | | 043 | 000 | .154 | .423 | |
| 0920 | 128 | | | | | | 043 | 000 | .206 | .300 | |
| 0940 | 102 | | | | | | 040 | 000 | .075 | .274 | |
| 1000 | 099 | | | | | | 040 | 000 | .064 | .186 | |
| 1020 | 053 | | | | | | 040 | 000 | .095 | .419 | |
| 1040 | 092 | | | 079-076 | | | 040 | 000 | .091 | .306 | |
| 1100 | 096 | | | | | | 040 | .054 | .074 | .000 | |
| 1120 | 108 | | | | | | 044 | 000 | .114 | .000 | |
| 1140 | 120 | | | | | | 040 | 000 | .072 | .000 | |
| 1200 | 117 | | | | | | 045 | 000 | .082 | .212 | |
| 1220 | 091 | | | | | | 040 | 000 | .118 | .200 | |
| 1240 | | | | | | | | | | .240 | |
| 1300 | 057 | | | | | | 043 | 000 | .129 | .000 | |
| 1320 | 091 | | | | | | 044 | 000 | .000 | .000 | |
| 1340 | | | | | | | | | | .000 | |
| 1400 | | | | | | | | | | .063 | |
| 1420 | | | | | | | | | | .108 | |
| 1440 | 157 | | | | | | 040 | 000 | .036 | .180 | |
| 1500 | 098 | | | | | | 057 | 000 | .090 | .213 | |
| 1520 | 148 | | | | | | 049 | 000 | .106 | .167 | |
| 1540 | 158 | | | | | | 041 | 000 | .083 | .000 | |
| 1600 | 154 | | | | | | 049 | 000 | .000 | .000 | |
| 1620 | 152 | | | | | | 042 | 000 | .000 | .000 | |
| 1640 | 128 | | | | | | 056 | 000 | .000 | .000 | |
| 1700 | 210 | | | | 175-148 | | 097 | 000 | .000 | .000 | |
| 1720 | 213 | | | | | | 144 | 000 | .250 | .000 | |
| 1740 | 255 | | | | | | 177 | 000 | .000 | .000 | |
| 1800 | 247 | | | | | | 129 | 000 | .155 | .000 | |
| 1820 | 247 | | | | 174-153 | | 141 | .198 | .000 | .000 | |
| 1840 | 256 | | | | | | 158 | 000 | .234 | .177 | |
| 1900 | 275 | | | | | | 135 | 000 | .071 | .000 | |
| 1920 | 245 | | | | | | 129 | 000 | .150 | .000 | |
| 1940 | 252 | | | 099-085 | | | 075 | .305 | .059 | .000 | |
| 2000 | 275 | | | | | | 135 | 000 | .013 | .000 | |

0830 GMT 20 OCT.

TABLE A.44 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 2040 | 281 | | | | | | | 131 | 000 | .000 | .000 |
| 2100 | 278 | | | | | | | 132 | 000 | .016 | .000 |
| 2120 | 268 | | | | | | | 125 | 000 | .000 | .000 |
| 2140 | 271 | | | | | | | 160 | 000 | .000 | .000 |
| 2200 | 277 | | | | | | | 135 | 000 | .036 | .000 |
| 2240 | 335 | | | | | | | 131 | 000 | .000 | .000 |
| 2300 | 349 | | | | | | | 137 | 000 | .000 | .000 |
| 2320 | 310 | | | | | | | 125 | 000 | .000 | .000 |
| 2340 | 328 | | | | | | | 120 | 000 | .000 | .000 |
| 0000 | 350 | | | | | | | 129 | 000 | .051 | .000 |
| 0020 | 334 | | | | | | | 125 | 000 | .000 | .000 |
| 0040 | 348 | | | | | | | 101 | 000 | .000 | .000 |
| 0100 | 338 | | | | | | | 125 | 000 | .000 | .000 |
| 0120 | 341 | | | | | | | 128 | 000 | .000 | .000 |
| 0140 | 328 | | | | | | | 118 | 000 | .000 | .000 |
| 0200 | 351 | | | | | | | 115 | 000 | .000 | .000 |
| 0220 | 343 | | | | | | | 111 | 000 | .110 | .000 |
| 0240 | 306 | | | | | | | 107 | 000 | .069 | .000 |
| 0300 | 267 | | | | | | | 114 | 000 | .124 | .000 |
| 0320 | 145 | | | | | | | 098 | 000 | .068 | .224 |
| 0340 | 129 | | | | | | | | | .203 | .177 |
| 0400 | 087 | | | | | | | | | .047 | .000 |
| 0420 | 076 | | | | | | | 106 | 000 | .000 | .000 |
| 0440 | 136 | | | | | | | 063 | 000 | .071 | .000 |
| 0500 | 135 | | | | | | | 073 | 000 | .014 | .000 |
| 0540 | 125 | | | | | | | 076 | 000 | .045 | .000 |
| 0600 | 135 | | | | | | | 048 | 000 | .035 | .134 |
| 0620 | 119 | | | | | | | 061 | .094 | .020 | .104 |
| 0640 | 136 | | | | | | | 043 | .122 | .000 | .059 |
| 0700 | 102 | | | | | | | 066 | .101 | .038 | .000 |
| 0720 | 122 | | | | | | | 041 | .103 | .018 | .113 |
| 0740 | 122 | | | | | | | 040 | .208 | .000 | .000 |
| 0800 | 122 | | | | | | | 040 | .113 | .000 | .000 |
| 0820 | 124 | | | | | | | 040 | .280 | .020 | .225 |
| | | | | | | | | 040 | .131 | .050 | .000 |
| | | | | | | | | 040 | | .080 | .078 |

0630 GMT 20 OCT.

TABLE A.45 OKINAWA TO HAWAII, CHECK MATE

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|--|--|---------|--|---------|-----|-----------|--------------|-----------------|
| 0820 | 133 | 400-368 | | | | | | | 120 | 000 | .163 | .000 |
| 0840 | 134 | | | | | | | | 057 | .468 | .532 | .632 |
| 0900 | 453 | | 120-114 | | | | | | 081 | .430 | .420 | .746 |
| 0920 | 125 | | | | | | | | 080 | 000 | .449 | .001 |
| 0940 | 040 | | | | | | | | B | 000 | .180 | .000 |
| 1000 | 040 | | | | | | | | B | 000 | .235 | .000 |
| 1020 | 143 | | | | | | | | 121 | 000 | .281 | .000 |
| 1040 | 088 | | | | | | | | 082 | 000 | .740 | .000 |
| 1100 | 093 | | | | | 072-070 | | | 062 | .065 | .118 | .000 |
| 1120 | 040 | | | | | | | | B | 000 | .182 | .000 |
| 1140 | 040 | | | | | | | | B | 000 | .247 | .000 |
| 1200 | 040 | | | | | | | | B | 000 | .291 | .000 |
| 1220 | 100 | | | | | | | | 040 | 000 | .158 | .000 |
| 1240 | 363 | | | | | | | | 064 | 000 | .274 | .000 |
| 1300 | 087 | | | | | 321-092 | | 061-047 | 040 | .793 | .133 | .000 |
| 1320 | 067 | | | | | | | | 062 | .480 | .000 | .000 |
| 1340 | 069 | | | | | | | | 053 | .357 | .000 | .000 |
| 1400 | 070 | | | | | 062-060 | | | 055 | .143 | .000 | .000 |
| 1420 | 070 | | | | | 064-060 | | | 054 | .250 | .218 | .000 |
| 1440 | 068 | | | | | | | | 052 | .250 | .195 | .000 |
| 1500 | | | | | | | | | | | .000 | .000 |
| 1520 | | | | | | | | | | | .000 | .000 |
| 1540 | | | | | | | | | | | .000 | .000 |
| 1600 | | | | | | | | | | | .000 | .000 |
| 1620 | 040 | | | | | | | | 040 | B | .293 | .293 |
| 1640 | | | | | | | | | | | .000 | .000 |
| 1700 | 130 | | 122-117 | | | | | | 066 | .313 | .200 | .000 |
| 1720 | 071 | | | | | | | | 055 | .188 | .352 | .000 |
| 1740 | 110 | | | | | 087-072 | | | 045 | .354 | .593 | .593 |
| 1800 | | | | | | 086-075 | | | | | .725 | .001 |
| 1820 | | | | | | | | | | | .000 | .000 |
| 1840 | 091 | | | | | | | | 087 | 000 | .235 | .000 |
| 1900 | | | | | | | | | | | .000 | .000 |
| 1920 | | | | | | | | | | | .000 | .000 |
| 1940 | | | | | | | | | | | .000 | .000 |
| 2000 | | | | | | | | | | | .000 | .000 |

TABLE A.45 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|---------|---------|-----|------|-----------|--------------|-----------------|
| 2020 | | | | | | | | | | .000 | |
| 2040 | | | | | | | | | | .000 | |
| 2100 | 208 | | | | 188-132 | | 122 | .651 | .110 | .329 | |
| 2120 | 272 | | | | | | 181 | 000 | .043 | .207 | |
| 2140 | 268 | | | | | | 176 | 000 | .114 | .053 | |
| 2200 | | | | | | | | | | .000 | |
| 2220 | | | | | | | | | | .000 | |
| 2240 | 294 | | | | | | 167 | 000 | .180 | .214 | |
| 2300 | 304 | | | | | | 188 | 000 | .232 | .353 | |
| 2320 | 303 | | | | | | 194 | 000 | .000 | .000 | |
| 2340 | 314 | | | | | | 190 | 000 | .228 | .295 | |
| 0000 | 315 | | | | | | 199 | 000 | .180 | .000 | |
| 0020 | 284 | | | | | | 183 | 000 | .000 | .000 | |
| 0040 | 287 | | | | | | 190 | 000 | .223 | .000 | |
| 0100 | 376 | | | | | | 222 | 000 | .109 | .000 | |
| 0120 | 317 | | | | | | 192 | 000 | .022 | .000 | |
| 0140 | | | | | | | | | | .000 | |
| 0200 | | | | | | | | | | .000 | |
| 0220 | 403 | | | | | | 193 | 000 | .018 | .000 | |
| 0240 | 417 | | | | | | 187 | 000 | .000 | .000 | |
| 0300 | | | | | | | | | | .000 | |
| 0320 | 423 | | | | | | 175 | 000 | .067 | .000 | |
| 0340 | 419 | | | | | | 190 | 000 | .065 | .000 | |
| 0400 | 290 | | | | | | 195 | 000 | .044 | .000 | |
| 0420 | 267 | | | | | | 167 | 000 | .059 | .000 | |
| 0440 | | | | | | | | | | .000 | |
| 0500 | 260 | | | | | | 160 | 000 | .088 | .000 | |
| 0520 | 257 | | | | | | 161 | 000 | .096 | .000 | |
| 0540 | 219 | | | | | | 120 | 000 | .042 | .000 | |
| 0600 | 248 | | | 219-205 | | | 112 | .235 | .100 | .000 | |
| 0620 | 040 | | | | | 160-142 | 040 | B | .000 | .000 | |
| 0640 | 040 | | | | | | 040 | B | .368 | .000 | |
| 0700 | 132 | | | | | | 109 | 000 | .261 | .000 | |
| 0720 | 149 | | | | | | 107 | 000 | .226 | .000 | |
| 0740 | | | | | | | | | | .000 | |
| 0800 | 134 | | | | | | 112 | 000 | .242 | .000 | |

TABLE A.46 CANTON TO PAJO ALTO, CHECK MATE

0830 GMT 20 OCT.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | SKGD AVERAGE | SINGLE SKGD DAY |
|------|-----|---------------------|--|--|--------------------|---------|---------|-----|-----------|--------------|-----------------|
| 0820 | 101 | | | | | | | 040 | 000 | .149 | .000 |
| 0840 | 121 | | | | | | | 042 | 000 | .156 | .200 |
| 0900 | 120 | | | | | | | 041 | 000 | .209 | .215 |
| 0940 | 102 | | | | | | | 049 | 000 | .064 | .350 |
| 1000 | 103 | | | | | | | 080 | 000 | .000 | .000 |
| 1020 | 101 | | | | | | | 041 | .050 | .072 | .000 |
| 1040 | 097 | | | | | | | 062 | .057 | .128 | .000 |
| 1100 | 040 | | | | 080-077 079-077 | | | 040 | 8 | .000 | .000 |
| 1120 | 112 | | | | | | | 043 | 000 | .000 | .000 |
| 1140 | 104 | | | | | | | 040 | 000 | .103 | .000 |
| 1200 | 124 | | | | | | | 040 | 000 | .094 | .000 |
| 1220 | 103 | | | | | | | 040 | .079 | .100 | .000 |
| 1240 | 074 | | | | | | | 040 | 000 | .063 | .000 |
| 1300 | | | | | | | | | | .000 | .000 |
| 1320 | | | | | | | | | | .000 | .000 |
| 1340 | 113 | | | | | | | 047 | 000 | .069 | .000 |
| 1400 | 129 | | | | | | | 042 | 000 | .071 | .000 |
| 1420 | 160 | | | | | | | 040 | 000 | .041 | .000 |
| 1500 | | | | | | | | | | .000 | .000 |
| 1520 | 160 | | | | | | | 049 | 000 | .090 | .000 |
| 1540 | 207 | | | | | | | 054 | 000 | .163 | .000 |
| 1600 | 228 | | | | | | | 127 | 000 | .000 | .000 |
| 1620 | 229 | | | | | | | 043 | 000 | .000 | .000 |
| 1640 | 243 | | | | | | | 061 | 000 | .000 | .000 |
| 1700 | | | | | | | | | | .000 | .000 |
| 1720 | 221 | | | | | | | 166 | 000 | .000 | .000 |
| 1740 | 259 | | | | | | | 176 | 000 | .000 | .000 |
| 1800 | 232 | | | | | | | 138 | .277 | .000 | .000 |
| 1820 | 204 | | | | | 171-145 | | 133 | 000 | .000 | .000 |
| 1840 | 236 | | | | | 175-157 | 129-120 | 113 | 000 | .000 | .000 |
| 1900 | 250 | | | | | | | 136 | .220 | .000 | .000 |
| 1920 | | | | | | | | | 000 | .000 | .000 |
| 1940 | 249 | | | | | 172-133 | | 127 | .320 | .000 | .000 |
| 2000 | 269 | | | | | | | 130 | 000 | .077 | .167 |

TABLE A.46 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|-------------------------------|-----|-----------|--------------|-----------------|
| 2020 | 287 | | | | | 090 | .340 | .000 | .000 |
| 2040 | 284 | | | | | 127 | .000 | .000 | .000 |
| 2100 | 277 | | | | | 163 | .000 | .000 | .000 |
| 2120 | 269 | | | | 174-107 | 107 | .000 | .000 | .000 |
| 2140 | 270 | | | | | 162 | .000 | .000 | .000 |
| 2200 | 277 | | | | | 126 | .000 | .000 | .000 |
| 2220 | 291 | | | | | 131 | .000 | .000 | .000 |
| 2240 | 288 | | | | | 136 | .000 | .000 | .000 |
| 2300 | 298 | | | | | 128 | .000 | .000 | .000 |
| 2320 | 310 | | | | | 135 | .000 | .000 | .000 |
| 2340 | 319 | | | | | 159 | .000 | .000 | .000 |
| 0000 | 310 | | | | | 095 | .000 | .000 | .000 |
| 0020 | 297 | | | | | 111 | .000 | .000 | .000 |
| 0040 | 307 | | | | | 133 | .000 | .016 | .000 |
| 0100 | 318 | | | | | 116 | .000 | .000 | .000 |
| 0120 | 307 | | | | | 118 | .000 | .000 | .000 |
| 0140 | 310 | | | | | 111 | .000 | .093 | .186 |
| 0200 | 304 | | | | | 099 | .000 | .000 | .000 |
| 0220 | 278 | | | | | 095 | .000 | .123 | .185 |
| 0240 | | | | | | | .000 | .225 | .320 |
| 0300 | 231 | | | | | 092 | .000 | .021 | .242 |
| 0320 | 215 | | | | | 064 | .000 | .065 | .047 |
| 0340 | 129 | | | | | 055 | .000 | .093 | .075 |
| 0400 | 143 | | | | | 052 | .000 | .045 | .135 |
| 0420 | 134 | | | | 086-079 | 048 | .081 | .013 | .000 |
| 0440 | 146 | | | | | 041 | .000 | .012 | .000 |
| 0500 | 040 | | | | | 040 | B | .024 | .000 |
| 0520 | 091 | | | | | 041 | .000 | .087 | .000 |
| 0540 | 119 | | | | | 044 | .000 | .076 | .000 |
| 0600 | 122 | | | | | 043 | .000 | .103 | .000 |
| 0620 | 148 | | | | | 040 | .093 | .064 | .000 |
| 0640 | 040 | | | | 109-102 | 040 | B | .156 | .125 |
| 0700 | | | | | 070-067 | | | | .113 |
| 0720 | 138 | | | | 109-104 | 040 | .162 | .032 | .065 |
| 0740 | 138 | | | | 113-102 | 040 | .153 | .038 | .114 |
| 0800 | 095 | | | | 082-071 083-079 083-067 | 040 | .291 | .135 | .254 |

TABLE A.47 KAUAI TO RAROTONGA, CHECK MATE

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|---------|---------|---------|---------|--|--|-----|-----------|--------------|-----------------|
| | | | | | | | | | | | | | |
| 0820 | | | | | | | | | | | | | .348 |
| 0840 | | | | | | | | | | | | | .000 |
| 0900 | | | | | | | | | | | | | .562 |
| 0920 | 634 | 545-257 | 214-168 | 150-141 | 122-079 | 076-072 | 061-059 | | | 040 | .677 | .415 | .464 |
| 0940 | 641 | 506-318 | 287-204 | 152-131 | 124-072 | | | | | 041 | .573 | .514 | .655 |
| 1000 | 640 | 503-299 | 277-264 | 215-135 | 126-078 | | | | | 065 | .600 | .384 | .383 |
| 1020 | 640 | 511-372 | 251-239 | 218-137 | 128-079 | | | | | 045 | .738 | .403 | .452 |
| 1040 | 640 | 509-230 | | | 216-079 | 071-066 | | | | 061 | .727 | .378 | .549 |
| 1100 | | | | | | | | | | | | | .001 |
| 1120 | 640 | 500-283 | 217-173 | 161-144 | 124-079 | 077-069 | 063-058 | | | 045 | .571 | .282 | .618 |
| 1140 | 573 | 508-268 | 252-135 | | 550-070 | | | | | 045 | .936 | .465 | .077 |
| 1200 | 530 | 501-231 | 215-143 | | | 130-069 | 128-059 | | | 043 | .885 | .211 | .340 |
| 1220 | 640 | 557-522 | | | | | | | | | .759 | .348 | .211 |
| 1240 | | | | | | | | | | | | | .195 |
| 1300 | 640 | 512-314 | 273-263 | 252-227 | 211-170 | 161-133 | 123-078 | | | 054 | .642 | .227 | .225 |
| 1320 | 640 | 602-267 | 252-232 | 221-130 | 124-077 | 074-070 | 063-058 | | | 055 | .858 | .524 | .327 |
| 1340 | 620 | 599-198 | | | 185-078 | 074-068 | 064-058 | | | 040 | .903 | .372 | .479 |
| 1400 | 230 | | | | 124-076 | 074-068 | 064-058 | | | 040 | .758 | .479 | .340 |
| 1420 | 612 | 588-303 | 217-181 | 171-129 | 291-070 | 069-058 | 069-058 | | | 040 | .911 | .479 | .372 |
| 1440 | 299 | 289-252 | | | | 241-069 | 064-057 | | | 044 | .878 | .454 | .337 |
| 1500 | 318 | 304-228 | | | | 286-069 | 064-057 | | | 040 | .031 | .430 | .217 |
| 1520 | 312 | | | | 217-077 | 074-069 | 062-058 | | | 040 | .842 | .453 | .346 |
| 1540 | 609 | | | | | 586-069 | 062-058 | | | 044 | .920 | .461 | .000 |
| 1600 | 640 | | | | | 608-069 | 062-058 | | | 040 | .912 | .312 | .200 |
| 1620 | 071 | | | | | | | | | 064 | .000 | .470 | .101 |
| 1640 | 067 | | | | | | | | | 065 | .000 | .448 | .481 |
| 1700 | 256 | 245-192 | | | | 160-067 | | | | 064 | .760 | .528 | .578 |
| 1720 | 320 | 253-233 | | | | 127-069 | | | | 064 | .371 | .349 | .236 |
| 1740 | 313 | | 151-134 | 165-157 | 151-144 | | | | | 138 | .275 | .299 | .299 |
| 1800 | 309 | | 190-176 | 124-116 | | | | | | 124 | .000 | .220 | .215 |
| 1820 | 303 | | | | | | | | | 112 | .042 | .236 | .232 |
| 1840 | 280 | | | | | | | | | 127 | .000 | .144 | .099 |
| 1900 | 305 | | | | | | | | | 125 | .000 | .169 | .090 |
| 1920 | 314 | | 164-157 | 123-119 | 099-078 | | | | | 068 | .130 | .187 | .000 |
| 1940 | 308 | | 166-158 | 124-118 | 094-087 | | | | | 060 | .085 | .083 | .000 |
| 2000 | 311 | | 167-157 | 124-117 | | | | | | 066 | .069 | .168 | .167 |

0830 GMT 20 OCT.

TABLE A.47 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|---------|---------|---------|---------|-----|------|-----------|--------------|-----------------|
| | | | | | | | | | | | | | |
| 2020 | 304 | | | 173-153 | 124-117 | 108-100 | 091-079 | | 067 | .152 | .023 | .023 | |
| 2040 | 280 | | | 192-154 | 123-117 | 087-079 | | | 063 | .295 | .134 | .134 | |
| 2100 | 280 | | | 167-153 | | 084-079 | | | 058 | .099 | .188 | .188 | |
| 2120 | 276 | | | 184-157 | 148-137 | 088-079 | | | 064 | .203 | .090 | .079 | |
| 2140 | 274 | | | 187-152 | 121-115 | 088-079 | | | 065 | .239 | .077 | .000 | |
| 2200 | 275 | | | 164-152 | | 102-097 | 088-079 | | 061 | .121 | .149 | .139 | |
| 2220 | 282 | | | 200-154 | | 087-080 | | | 066 | .149 | .147 | .000 | |
| 2240 | 282 | | | 179-157 | | 086-079 | | | 062 | .132 | .053 | .000 | |
| 2300 | 262 | | | | | | | | 191 | .000 | .000 | .000 | |
| 2320 | 302 | | | 189-156 | 125-119 | 085-077 | | | 057 | .167 | .236 | .000 | |
| 2340 | 337 | | | 169-153 | | 088-079 | | | 057 | .079 | .218 | .000 | |
| 0000 | 317 | | | 187-160 | 123-112 | 104-098 | 088-079 | | 062 | .184 | .138 | .000 | |
| 0020 | 318 | | | 216-142 | 124-118 | 105-098 | | | 056 | .408 | .115 | .000 | |
| 0040 | 316 | | | 216-153 | | | | | 066 | .280 | .100 | .000 | |
| 0100 | | | | | | | | | | | | | |
| 0120 | 315 | | | 219-154 | | 106-088 | | | 052 | .316 | .204 | .000 | |
| 0140 | 315 | | | 201-146 | 123-116 | 105-079 | | | 052 | .335 | .000 | .000 | |
| 0200 | 315 | | | 185-151 | 123-116 | 105-077 | | | 052 | .262 | .104 | .269 | |
| 0220 | 314 | | | 201-145 | | 106-079 | | | 053 | .318 | .122 | .112 | |
| 0240 | 313 | | | 203-154 | 150-134 | 124-116 | 105-079 | | 053 | .446 | .314 | .556 | |
| 0300 | 317 | | | 188-146 | | 105-095 | 089-079 | 072-070 | 052 | .242 | .366 | .050 | |
| 0320 | 316 | | | | 122-117 | 102-094 | 090-079 | 061-058 | 042 | .120 | .199 | .284 | |
| 0340 | | | | | | | | | | | | .161 | |
| 0400 | | | | | | | | | | | | .087 | |
| 0420 | 316 | | | | 123-119 | 100-090 | 087-081 | 053-050 | 042 | .091 | .000 | .000 | |
| 0440 | | | | | | | | | | | | .000 | |
| 0500 | 640 | 440-409 | | | | 084-079 | 071-069 | | 042 | .189 | .017 | .000 | |
| 0520 | 640 | 500-482 | | 161-157 | | 085-080 | 072-070 | | 042 | .048 | .056 | .000 | |
| 0540 | 640 | 518-494 | | 207-189 | | 105-091 | 085-078 | 072-070 | 040 | .177 | .000 | .000 | |
| 0600 | 640 | 380-365 | | 200-192 | | | | | 040 | .083 | .000 | .000 | |
| 0620 | | | | | | | | | | | | .000 | |
| 0640 | 640 | 418-361 | | 232-225 | | 104-090 | 086-077 | 062-060 | 044 | .149 | .174 | .035 | |
| 0700 | 640 | 430-363 | | 299-288 | | 148-104 | 097-092 | | 045 | .313 | .015 | .162 | |
| 0720 | 640 | 459-346 | | 241-220 | | | | | 043 | .241 | .000 | .030 | |
| 0740 | | | | | | | | | | | | .000 | |
| 0800 | 640 | 509-471 | | 436-340 | 126-112 | 100-079 | | | 043 | .283 | .499 | .000 | |

TABLE A.48 ROI-NAMUR TO WAKE, CHECK MATE

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|--|-----|-----------|--------------|-----------------|
| | | | | | | | | | | | | |
| 0820 | 195 | | | | | | | | 040 | 000 | .000 | .000 |
| 0840 | 272 | | | | | | | | 040 | 000 | .009 | .000 |
| 0900 | 178 | | | | | | | | 040 | .022 | .000 | .000 |
| 0940 | 327 | | | | | | | | 040 | .024 | .000 | .123 |
| 1000 | 328 | | | | | | | | 040 | .021 | .000 | .000 |
| 1020 | 356 | | | | | | | | 040 | 000 | .000 | .000 |
| 1040 | 372 | | | | | | | | 040 | .018 | .000 | .000 |
| 1100 | 410 | | | | | | | | 040 | .059 | .000 | .000 |
| 1120 | 409 | | | | | | | | 040 | .024 | .000 | .000 |
| 1140 | 377 | | | | | | | | 040 | 000 | .000 | .000 |
| 1200 | 379 | | | | | | | | 040 | 000 | .000 | .000 |
| 1220 | 372 | | | | | | | | 040 | 000 | .000 | .000 |
| 1240 | 376 | | | | | | | | 040 | 000 | .000 | .000 |
| 1300 | 374 | | | | | | | | 040 | 000 | .041 | .000 |
| 1320 | | | | | | | | | 040 | 000 | .313 | .625 |
| 1340 | | | | | | | | | 040 | 000 | .000 | .000 |
| 1400 | 307 | | | | | | | | 040 | .011 | .000 | .000 |
| 1420 | 283 | | | | | | | | 040 | 000 | .049 | .000 |
| 1440 | 254 | | | | | | | | 040 | 000 | .000 | .147 |
| 1500 | 195 | | | | | | | | 040 | .079 | .000 | .000 |
| 1520 | 151 | | | | | | | | 040 | .045 | .067 | .133 |
| 1540 | 127 | | | | | | | | 040 | 000 | .027 | .053 |
| 1600 | 103 | | | | | | | | 040 | .023 | .000 | .000 |
| 1620 | 089 | | | | | | | | 040 | 000 | .000 | .000 |
| 1640 | 083 | | | | | | | | 040 | 000 | .048 | .000 |
| 1700 | 085 | | | | | | | | 040 | 000 | .090 | .018 |
| 1720 | | | | | | | | | 040 | 000 | .203 | .610 |
| 1740 | 076 | | | | | | | | 040 | 000 | .227 | .001 |
| 1800 | 073 | | | | | | | | 040 | 000 | .029 | .128 |
| 1820 | 080 | | | | | | | | 040 | 000 | .020 | .000 |
| 1840 | 096 | | | | | | | | 040 | .073 | .000 | .000 |
| 1900 | 126 | | | | | | | | 040 | 000 | .006 | .013 |
| 1920 | 144 | | | | | | | | 040 | .023 | .000 | .038 |
| 1940 | 156 | | | | | | | | 040 | 000 | .006 | .018 |
| 2000 | 167 | | | | | | | | 040 | 000 | .000 | .000 |

0630 GMT 20 OCT.

TABLE A.48 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SMALLE RECORD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-------------------------|
| 2020 | 170 | | | | | | | 040 | 000 | .000 | .000 |
| 2040 | 177 | | | | | | | 040 | 000 | .004 | .013 |
| 2100 | 185 | | | | | | | 048 | 000 | .000 | .000 |
| 2120 | 188 | | | | | | | 040 | 000 | .000 | .000 |
| 2140 | 199 | | | | | | | 049 | 000 | .000 | .000 |
| 2200 | 211 | | | | | | | 049 | .062 | .000 | .000 |
| 2220 | 213 | | | | | | | 044 | 000 | .000 | .000 |
| 2240 | 180 | | | | | | | 054 | 000 | .000 | .000 |
| 2300 | 200 | | | | | | | 077 | 000 | .000 | .000 |
| 2320 | 190 | | | | | | | 049 | 000 | .000 | .000 |
| 2340 | 190 | | | | | | | 049 | 000 | .000 | .000 |
| 0000 | 178 | | | | | | | 048 | .046 | .006 | .000 |
| 0020 | 175 | | | | | | | 066 | 000 | .000 | .000 |
| 0040 | 174 | | | | | | | 080 | 000 | .000 | .000 |
| 0100 | 206 | | | | | | | 075 | 000 | .000 | .000 |
| 0120 | 229 | | | | | | | 072 | 000 | .000 | .000 |
| 0140 | 249 | | | | | | | 071 | 000 | .000 | .000 |
| 0200 | 203 | | | | | | | 066 | 000 | .000 | .000 |
| 0220 | 229 | | | | | | | 041 | 000 | .000 | .000 |
| 0240 | 205 | | | | | | | 040 | 000 | .000 | .000 |
| 0300 | 217 | | | | | | | 040 | 000 | .000 | .000 |
| 0320 | 219 | | | | | | | 046 | 000 | .000 | .000 |
| 0340 | 230 | | | | | | | 042 | 000 | .000 | .000 |
| 0400 | 231 | | | | | | | 048 | 000 | .000 | .000 |
| 0420 | 283 | | | | | | | 040 | 000 | .000 | .000 |
| 0440 | 231 | | | | | | | 040 | 000 | .000 | .000 |
| 0500 | 248 | | | | | | | 040 | 000 | .141 | .424 |
| 0520 | 259 | | | | | | | 040 | 000 | .000 | .000 |
| 0540 | 251 | | | | | | | 040 | 000 | .000 | .000 |
| 0600 | 246 | | | | | | | 040 | 000 | .000 | .000 |
| 0620 | 246 | | | | | | | 040 | 000 | .000 | .000 |
| 0640 | 246 | | | | | | | 040 | 000 | .000 | .000 |
| 0700 | 194 | | | | | | | 040 | 000 | .015 | .000 |
| 0720 | 193 | | | | | | | 040 | 000 | .000 | .044 |
| 0740 | 204 | | | | | | | 040 | 000 | .000 | .000 |
| 0800 | 195 | | | | | | | 040 | 000 | .000 | .000 |

TABLE A.49 ROI-NAMUR TO FAIRBANKS, CHECK MATE

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0820 | 149 | | | | | | | 040 | 000 | .000 | .000 |
| 0840 | 094 | | | | | | | 042 | 000 | .000 | .000 |
| 0900 | 095 | | | | | | | 044 | 000 | .000 | .000 |
| 0920 | 102 | | | | | | | 044 | 000 | .000 | .000 |
| 0940 | 092 | | | | | | | 040 | 000 | .000 | .000 |
| 1000 | 092 | | | | | | | 040 | 000 | .000 | .000 |
| 1020 | 092 | | | | | | | 040 | 000 | .000 | .000 |
| 1040 | 098 | | | | | | | 040 | 000 | .000 | .000 |
| 1100 | 093 | | | | | | | 042 | 000 | .000 | .000 |
| 1120 | 120 | | | | | | | 043 | 000 | .000 | .000 |
| 1140 | 122 | | | | | | | 043 | 000 | .000 | .000 |
| 1200 | 144 | | | | | | | 043 | 000 | .000 | .000 |
| 1220 | 141 | | | | | | | 043 | 000 | .000 | .000 |
| 1240 | 135 | | | | | | | 040 | 000 | .000 | .000 |
| 1300 | 138 | | | | | | | 041 | 000 | .000 | .000 |
| 1320 | 137 | | | | | | | 041 | 000 | .000 | .000 |
| 1340 | 160 | | | | | | | 041 | 000 | .000 | .000 |
| 1400 | 157 | | | | | | | 041 | 000 | .000 | .000 |
| 1420 | 152 | | | | | | | 041 | 000 | .000 | .000 |
| 1440 | 156 | | | | | | | 040 | 000 | .000 | .000 |
| 1500 | 145 | | | | | | | 040 | 000 | .000 | .000 |
| 1520 | 151 | | | | | | | 040 | 000 | .000 | .000 |
| 1540 | 143 | | | | | | | 040 | 000 | .000 | .000 |
| 1600 | 136 | | | | | | | 040 | 000 | .000 | .000 |
| 1620 | 118 | | | | | | | 040 | 000 | .000 | .000 |
| 1640 | 110 | | | | | | | 040 | 000 | .000 | .000 |
| 1700 | | | | | | | | | | | |
| 1720 | 097 | | | | | | | 044 | 000 | .000 | .000 |
| 1740 | 098 | | | | | | | 045 | 000 | .000 | .000 |
| 1800 | 115 | | | | | | | 040 | 000 | .000 | .000 |
| 1820 | 136 | | | | | | | 065 | 000 | .000 | .000 |
| 1840 | 183 | | | | | | | 077 | 000 | .000 | .000 |
| 1900 | 214 | | | | | | | 087 | 000 | .000 | .000 |
| 1920 | 243 | | | | | | | 087 | 000 | .000 | .000 |
| 1940 | 258 | | | | | | | 091 | 000 | .000 | .000 |
| 2000 | 242 | | | | | | | 091 | 000 | .000 | .000 |

0830 GRT 20 OCT.

TABLE A.49 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | EMGD AVERAGE | SINGLE EMGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 2020 | 241 | | | | | | | 097 | 000 | .000 | .000 |
| 2040 | 237 | | | | | | | 091 | 000 | .000 | .000 |
| 2100 | 235 | | | | | | | 102 | 000 | .000 | .000 |
| 2120 | 242 | | | | | | | 110 | 000 | .045 | .091 |
| 2140 | 264 | | | | | | | 111 | 000 | .040 | .000 |
| 2200 | 271 | | | | | | | 100 | 000 | .000 | .000 |
| 2220 | 269 | | | | | | | 134 | 000 | .000 | .000 |
| 2240 | | | | | | | | | | | |
| 2300 | 251 | | | | | | | 129 | 000 | .044 | .132 |
| 2320 | 257 | | | | | | | 166 | 000 | .000 | .000 |
| 2340 | 238 | | | | | | | 134 | 000 | .000 | .000 |
| 0000 | 255 | | | | | | | 129 | 000 | .027 | .082 |
| 0020 | 253 | | | | | | | 119 | 000 | .000 | .000 |
| 0040 | 299 | | | | | | | 128 | 000 | .156 | .156 |
| 0100 | 295 | | | | | | | 068 | 000 | .000 | .000 |
| 0120 | 321 | | | | | | | 122 | 000 | .000 | .000 |
| 0140 | 304 | | | | | | | 115 | 000 | .000 | .000 |
| 0200 | 302 | | | | | | | 110 | 000 | .000 | .000 |
| 0220 | | | | | | | | | | | |
| 0240 | 239 | | | | | | | 114 | 000 | .000 | .000 |
| 0300 | 226 | | | | | | | 116 | 000 | .000 | .000 |
| 0320 | 238 | | | | | | | 105 | 000 | .000 | .000 |
| 0340 | 251 | | | | | | | 101 | 000 | .000 | .000 |
| 0400 | 228 | | | | | | | 098 | 000 | .000 | .000 |
| 0420 | 208 | | | | | | | 075 | 000 | .066 | .197 |
| 0440 | 213 | | | | | | | 062 | 000 | .000 | .000 |
| 0500 | 209 | | | | | | | 074 | 000 | .000 | .000 |
| 0520 | 202 | | | | | | | 060 | 000 | .000 | .000 |
| 0540 | 193 | | | | | | | 052 | 000 | .000 | .000 |
| 0600 | 187 | | | | | | | 046 | 000 | .000 | .000 |
| 0620 | 173 | | | | | | | 040 | 000 | .000 | .000 |
| 0640 | 169 | | | | | | | 040 | 000 | .043 | .000 |
| 0700 | 169 | | | | | | | 040 | 000 | .000 | .000 |
| 0720 | 157 | | | | | | | 040 | 000 | .000 | .000 |
| 0740 | 155 | | | | | | | 040 | 000 | .000 | .000 |
| 0800 | 134 | | | | | | | 042 | 000 | .000 | .000 |
| 0820 | 149 | | | | | | | 040 | 000 | .000 | .000 |

TABLE A.50 OKINAWA TO TUTUILA, CHECK MATE

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|---------|--|---------|--|-----|-----------|--------------|-----------------|
| 0820 | | | | | | | | 080 | 000 | .000 | .000 |
| 0840 | 321 | | | | | | | 040 | .054 | .085 | .000 |
| 0900 | 339 | | | | | | | | | .162 | .117 |
| 0920 | | | | | | | | | | | .068 |
| 0940 | 351 | 154-135 | 126-110 | | | | | 081 | .070 | .160 | .217 |
| 1000 | | | | | | | | | | | .237 |
| 1020 | 316 | 159-148 | 120-112 | 092-085 | | | | 077 | .109 | .144 | .124 |
| 1040 | 314 | 159-144 | | 120-086 | | | | 077 | .207 | .149 | .076 |
| 1100 | 255 | 151-148 | | 140-095 | | | | 085 | .282 | .214 | .224 |
| 1120 | 295 | 160-148 | | 125-095 | | | | 087 | .202 | .202 | .309 |
| 1140 | 311 | | | | | | | 086 | 000 | .174 | .380 |
| 1200 | 297 | | | | | | | 084 | 000 | .125 | .061 |
| 1220 | 316 | | | | | | | 081 | 000 | .157 | .067 |
| 1240 | 302 | | | | | | | 084 | .041 | .209 | .439 |
| 1300 | 290 | | | 114-105 | | | | 083 | 000 | .311 | .306 |
| 1320 | 295 | | | 076-070 | | | | 056 | .042 | .259 | .330 |
| 1340 | 267 | | | | | 074-068 | | 063 | .029 | .368 | .372 |
| 1400 | 269 | 155-149 | | | | | | 110 | .038 | .168 | .330 |
| 1420 | 265 | 153-147 | 128-120 | | | | | 110 | .090 | .306 | .087 |
| 1440 | | | | | | | | | | | .255 |
| 1500 | 271 | | | 101-097 | | | | 065 | .029 | .146 | .213 |
| 1520 | | | | | | | | 065 | .261 | .252 | .331 |
| 1540 | 207 | 172-150 | | 087-074 | | | | 056 | .309 | .000 | .282 |
| 1600 | 195 | 168-150 | | 088-069 | | | | | | | .195 |
| 1620 | | | | | | | | | | | .467 |
| 1640 | 135 | | | 085-070 | | | | 063 | .208 | .245 | .000 |
| 1700 | 142 | | | 078-070 | | | | 065 | .104 | .040 | .079 |
| 1720 | 157 | | | 083-070 | | | | 063 | .138 | .468 | .590 |
| 1740 | 173 | | | | | | | 056 | 000 | .316 | .410 |
| 1800 | 183 | | | | | | | 085 | 000 | .280 | .468 |
| 1820 | 185 | | | | | | | 063 | .033 | .110 | .000 |
| 1840 | 182 | | | 075-071 | | | | 090 | 000 | .270 | .250 |
| 1900 | 154 | 139-135 | 121-116 | 110-101 | | | | 065 | .261 | .346 | .311 |
| 1920 | 141 | | 130-120 | | | 100-067 | | 065 | .566 | .310 | .000 |
| 1940 | 131 | | 126-117 | 111-102 | | 098-095 | | 091 | .525 | .123 | .000 |
| 2000 | 131 | | 125-118 | 115-103 | | | | 100 | .613 | | .000 |

0830 OCT 20 OCT.

TABLE A.50 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|---------|--|-----|------|-----------|--------------|-----------------|
| 2020 | 040 | | | | | | 040 | B | | .000 | |
| 2040 | 154 | | | | 126-122 | | 114 | .100 | .360 | .000 | |
| 2120 | 236 | | | | | | 125 | 000 | .054 | .000 | |
| 2140 | 293 | | | | | | 128 | .436 | .028 | .000 | |
| 2200 | 290 | | | 222-218 | 194-148 | | 126 | .232 | .101 | .000 | |
| 2240 | 299 | | | 173-147 | | | 130 | .136 | .000 | .000 | |
| 2300 | 294 | | | 158-143 | 170-141 | | 127 | .234 | .000 | .000 | |
| 2340 | 295 | | | 212-208 | | | 177 | .034 | .000 | .000 | |
| 0000 | 298 | | | 210-206 | | | 217 | .099 | .113 | .000 | |
| 0020 | 309 | | | 240-232 | 167-142 | | 134 | .343 | .175 | .000 | |
| 0040 | 321 | | | 293-277 | | | 154 | .114 | .156 | .000 | |
| 0100 | 334 | | | 222-203 | | | 171 | 000 | .111 | .000 | |
| 0120 | 334 | | | 222-199 | | | 172 | 000 | .142 | .000 | |
| 0140 | 343 | | | 214-194 | | | 162 | .124 | .125 | .000 | |
| 0200 | 297 | | | | | | 184 | 000 | .060 | .000 | |
| 0220 | 297 | | | | | | 227 | 000 | .067 | .000 | |
| 0240 | 309 | | | | | | 184 | 000 | .091 | .000 | |
| 0300 | 314 | | | | | | 191 | 000 | .091 | .000 | |
| 0320 | 322 | | | | | | 188 | 000 | .149 | .000 | |
| 0340 | | | | | | | 151 | | | .062 | |
| 0400 | | | | | | | | | | .000 | |
| 0420 | | | | | | | | | | .000 | |
| 0440 | | | | | | | | | | .000 | |
| 0500 | | | | | | | | | | .000 | |
| 0520 | | | | | | | | | | .000 | |
| 0540 | | | | | | | | | | .023 | |
| 0600 | | | | | | | | | | .039 | |
| 0620 | | | | | | | | | | .052 | |
| 0640 | | | | | | | | | | .035 | |
| 0700 | | | | | | | | | | .027 | |
| 0720 | | | | | | | | | | .000 | |
| 0740 | | | | | | | | | | .000 | |
| 0800 | | | | | | | | | | .000 | |

TABLE A.51 ROI-NAMUR TO HAWAII, BLUE GILL

1000 CRT 26 OCT.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|---------|--|--|--|-----|-----------|--------------|-----------------|
| 1000 | 361 | | | | | | | 041 | .088 | .064 | .000 |
| 1020 | 313 | | 124-115 | | | | | 041 | .022 | .052 | .000 |
| 1040 | 306 | | | | | | | | | | .000 |
| 1100 | 287 | | | | | | | | .088 | .071 | .000 |
| 1120 | 271 | 244-229 | | | | | | 045 | .123 | .010 | .000 |
| 1140 | 345 | | | | | | | 043 | .088 | .085 | .000 |
| 1200 | 319 | 253-234 | | | | | | 041 | .194 | .036 | .000 |
| 1220 | 287 | | | | | | | 043 | .043 | .094 | .000 |
| 1240 | 309 | | | | | | | 043 | .078 | .013 | .000 |
| 1300 | 247 | | | | | | | 041 | .000 | .024 | .000 |
| 1320 | 196 | | 124-113 | | | | | 041 | .053 | .000 | .000 |
| 1340 | 200 | | | | | | | 041 | .051 | .032 | .000 |
| 1400 | 239 | | | | | | | 041 | .025 | .124 | .000 |
| 1420 | 232 | | | 157-149 | | | | 041 | .071 | .034 | .000 |
| 1440 | 224 | | | | | | | 043 | .042 | .052 | .000 |
| 1500 | | | | | | | | 041 | .033 | .097 | .028 |
| 1520 | | | | | | | | | | | .000 |
| 1540 | | | | | | | | | | | .000 |
| 1600 | | | | | | | | | | | .000 |
| 1620 | | | | | | | | | | | .020 |
| 1640 | 186 | | | | | | | 043 | .179 | .020 | .143 |
| 1700 | 190 | | | | | | | 042 | .351 | .000 | .040 |
| 1720 | 185 | | | 159-135 | | | | 041 | .076 | .032 | .064 |
| 1740 | 213 | | 176-134 | | | | | 042 | .012 | .025 | .024 |
| 1800 | 279 | | 160-149 | | | | | 043 | .000 | .045 | .060 |
| 1820 | | | | | | | | | | | .000 |
| 1840 | 335 | | | | | | | 051 | .000 | .000 | .000 |
| 1900 | 366 | | | | | | | 052 | .025 | .000 | .000 |
| 1920 | 319 | | | | | | | 061 | .000 | .000 | .000 |
| 1940 | 323 | | | | | | | 080 | .000 | .000 | .000 |
| 2000 | 350 | | | | | | | 095 | .000 | .000 | .000 |
| 2020 | 368 | | | | | | | 117 | .000 | .000 | .000 |
| 2040 | 369 | | | | | | | 109 | .000 | .000 | .112 |
| 2100 | 409 | | | | | | | 117 | .000 | .000 | .000 |
| 2120 | 439 | | | | | | | 149 | .000 | .000 | .000 |
| 2140 | | | | | | | | | .000 | .000 | .000 |

TABLE A.51 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|---------|--|-----|-----------|--------------|-----------------|
| 2200 | | | | | | | | | | | .022 | |
| 2220 | | | | | | | | | | .000 | .000 | |
| 2240 | 456 | | | | | | | | 111 | .000 | .000 | |
| 2300 | 443 | | | | | | | | 085 | .000 | .000 | |
| 2320 | 440 | | | | | | | | 097 | .015 | .000 | |
| 2340 | 438 | | | | | | | | 110 | .000 | .000 | |
| 0000 | 466 | | | | | | | | 123 | .044 | .088 | |
| 0020 | 445 | 429-377 | | | | | | | 099 | .107 | .019 | |
| 0040 | 359 | | | | | | | | 123 | .072 | .008 | |
| 0100 | 414 | | | | | | | | 091 | .035 | .020 | |
| 0120 | 425 | | | | | | | | 108 | .013 | .013 | |
| 0140 | 407 | | | | | | 101-097 | | 089 | .010 | .012 | |
| 0200 | | | | | | | | | | .000 | .000 | |
| 0220 | 341 | | | | | | | | 077 | .049 | .099 | |
| 0240 | 431 | | | | | | | | 071 | .000 | .000 | |
| 0300 | 394 | | | | | | | | 061 | .138 | .275 | |
| 0320 | 392 | | | | | | | | 123 | .015 | .030 | |
| 0340 | 363 | | | | | | | | 077 | .006 | .013 | |
| 0400 | 327 | | | | | | | | 122 | .002 | .000 | |
| 0420 | 480 | | | | | | | | 060 | .003 | .007 | |
| 0440 | 320 | | | | | | | | 060 | .047 | .000 | |
| 0500 | 320 | | | | | | | | 050 | .012 | .024 | |
| 0520 | 400 | | | | | | | | 040 | .000 | .000 | |
| 0540 | 400 | | | | | | | | 040 | .000 | .000 | |
| 0600 | | | | | | | | | | .000 | .000 | |
| 0620 | 404 | | | | | | | | 045 | .000 | .000 | |
| 0640 | 413 | | | | | | | | 041 | .000 | .000 | |
| 0700 | 501 | | | | | | | | 042 | .000 | .000 | |
| 0720 | 583 | | | | | | | | 046 | .131 | .243 | |
| 0740 | 353 | | | | | | | | 050 | .021 | .000 | |
| 0800 | 586 | | | | | | | | 043 | .015 | .054 | |
| 0820 | 575 | | | | | | | | 043 | .020 | .059 | |
| 0840 | | | | | | | | | | .000 | .000 | |
| 0900 | 358 | | | | | | | | 042 | .000 | .000 | |
| 0920 | 316 | | | | | | | | 043 | .037 | .026 | |
| 0940 | 369 | | | | | | | | 047 | .019 | .016 | |

TABLE A.52 ROI-NAMUR TO KAUAI, BLUE GILL

1000 GMT 26 OCT.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|---------|--|-----|-----------|--------------|-----------------|
| 1000 | 426 | | | | | | | 045 | .213 | .000 | .000 |
| 1020 | 321 | | | | | | | 040 | 000 | .000 | .000 |
| 1040 | 329 | | | | | | | 040 | 000 | .000 | .000 |
| 1100 | 341 | | | | | | | 040 | 000 | .000 | .000 |
| 1120 | 350 | | | | | | | 040 | 000 | .000 | .000 |
| 1140 | 266 | | | | | | | 040 | 000 | .000 | .000 |
| 1200 | 325 | | | | | | | 040 | 000 | .000 | .000 |
| 1220 | 307 | | | | | | | 040 | .056 | .000 | .000 |
| 1240 | 277 | | | | | | | 040 | 000 | .000 | .000 |
| 1300 | 231 | | | | | | | 040 | 000 | .000 | .000 |
| 1320 | 206 | | | | | | | 040 | 000 | .000 | .000 |
| 1340 | | | | | | | | 040 | 000 | .000 | .000 |
| 1400 | 216 | | | | | | | 040 | 000 | .000 | .000 |
| 1420 | 236 | | | | | | | 040 | 000 | .000 | .000 |
| 1440 | 236 | | | | | | | 040 | 000 | .000 | .000 |
| 1500 | 238 | | | | | | | 040 | 000 | .000 | .000 |
| 1520 | 248 | | | | | | | 042 | 000 | .000 | .000 |
| 1540 | 260 | | | | | | | 043 | 000 | .000 | .000 |
| 1600 | | | | | | | | | 000 | .000 | .000 |
| 1620 | 140 | | | | | | | 040 | 000 | .000 | .000 |
| 1640 | 128 | | | | | | | 040 | 000 | .000 | .000 |
| 1700 | 109 | | | | | | | 041 | 000 | .000 | .000 |
| 1720 | 131 | | | | | | | 040 | 000 | .000 | .000 |
| 1740 | 171 | | | | | | | 040 | 069 | .000 | .000 |
| 1800 | 195 | | | | | 158-149 | | 040 | 000 | .000 | .000 |
| 1820 | 230 | | | | | | | 047 | 000 | .000 | .000 |
| 1840 | 283 | | | | | | | 059 | 000 | .000 | .000 |
| 1900 | 307 | | | | | | | 064 | 000 | .000 | .000 |
| 1920 | 310 | | | | | | | 081 | 000 | .000 | .000 |
| 1940 | 320 | | | | | | | 085 | 000 | .000 | .000 |
| 2000 | 318 | | | | | | | 081 | 000 | .000 | .000 |
| 2020 | 319 | | | | | | | 085 | 000 | .000 | .000 |
| 2040 | 349 | | | | | | | 087 | 000 | .000 | .000 |
| 2100 | 384 | | | | | | | 107 | 000 | .000 | .000 |
| 2120 | 412 | | | | | | | 123 | 000 | .000 | .000 |
| 2140 | 445 | | | | | | | 109 | 000 | .000 | .000 |

TABLE A.52 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|-----|-----------|--------------|-----------------|
| 2200 | 328 | | 111 | 000 | .003 | .000 |
| 2220 | 342 | | 111 | 000 | .000 | .000 |
| 2240 | 455 | | 117 | .361 | .000 | .000 |
| 2300 | 414 | 426-304 313-299 | 115 | .047 | .000 | .000 |
| 2320 | 432 | | 111 | 000 | .005 | .000 |
| 2340 | 326 | | 126 | 000 | .023 | .000 |
| 0000 | 329 | | 123 | 000 | .000 | .000 |
| 0020 | 454 | 415-334 | 131 | .251 | .000 | .000 |
| 0040 | 430 | 354-318 | 125 | .118 | .000 | .000 |
| 0100 | 391 | | 129 | 000 | .000 | .000 |
| 0120 | 397 | 317-299 274-240 | 123 | .066 | .000 | .000 |
| 0140 | 414 | | 226 | .181 | .000 | .000 |
| 0200 | 336 | | 125 | 000 | .000 | .000 |
| 0220 | 432 | | 109 | 000 | .053 | .000 |
| 0240 | 464 | 412-343 410-352 | 106 | .193 | .005 | .000 |
| 0300 | 432 | | 087 | .168 | .000 | .000 |
| 0320 | 368 | | 097 | 000 | .000 | .000 |
| 0340 | 425 | | 097 | 000 | .000 | .000 |
| 0400 | 407 | 361-343 | 083 | .056 | .028 | .000 |
| 0420 | 327 | | 073 | 000 | .127 | .128 |
| 0440 | 349 | | 075 | 000 | .056 | .168 |
| 0500 | 341 | | 062 | 000 | .063 | .188 |
| 0520 | 336 | | 045 | 000 | .112 | .109 |
| 0540 | 315 | | 045 | 000 | .051 | .163 |
| 0600 | 351 | | 040 | 000 | .000 | .154 |
| 0620 | 349 | | 040 | 000 | .000 | .000 |
| 0640 | 385 | | 041 | 000 | .042 | .125 |
| 0700 | 521 | | 042 | 000 | .014 | .000 |
| 0720 | 470 | | 041 | 000 | .044 | .000 |
| 0740 | 452 | | 040 | 000 | .036 | .000 |
| 0800 | 317 | | 040 | 000 | .000 | .000 |
| 0820 | 302 | | 040 | 000 | .000 | .000 |
| 0840 | 319 | | 040 | 000 | .000 | .000 |
| 0900 | 302 | | 040 | 000 | .000 | .000 |
| 0920 | 304 | | 040 | 000 | .000 | .000 |
| 0940 | | | 040 | 000 | .000 | .000 |

TABLE A.53 CANTON TO FAIRBANKS, BLUE GILL

1000 GMT 26 OCT.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 1000 | | | | | | | | | | .000 | |
| 1020 | | | | | | | | | | .000 | |
| 1040 | 132 | | | | | | | 040 | .000 | .000 | |
| 1100 | 134 | | | | | | | 040 | .000 | .000 | |
| 1120 | 131 | | | | | | | 040 | .000 | .000 | |
| 1140 | 098 | | | | | | | 040 | .000 | .000 | |
| 1200 | 079 | | | | | | | 041 | .000 | .000 | |
| 1220 | 106 | | | | | | | 041 | .000 | .000 | |
| 1240 | | | | | | | | | | .000 | |
| 1300 | 116 | | | | | | | 041 | .000 | .000 | |
| 1320 | 080 | | | | | | | 040 | .000 | .000 | |
| 1340 | 040 | | | | | | | 040 | .000 | .000 | |
| 1400 | 079 | | | | | | | 041 | .000 | .000 | |
| 1420 | 081 | | | | | | | 041 | .000 | .000 | |
| 1440 | 110 | | | | | | | 041 | .000 | .000 | |
| 1500 | 103 | | | | | | | 041 | .000 | .000 | |
| 1520 | 110 | | | | | | | 040 | .000 | .000 | |
| 1540 | 110 | | | | | | | 040 | .000 | .000 | |
| 1600 | | | | | | | | 040 | .000 | .000 | |
| 1620 | 095 | | | | | | | 040 | .000 | .000 | |
| 1640 | 098 | | | | | | | 042 | .000 | .000 | |
| 1700 | | | | | | | | | | .000 | |
| 1720 | | | | | | | | | | .000 | |
| 1740 | | | | | | | | | | .000 | |
| 1800 | | | | | | | | | | .000 | |
| 1820 | | | | | | | | | | .000 | |
| 1840 | | | | | | | | | | .000 | |
| 1900 | | | | | | | | | | .000 | |
| 1920 | | | | | | | | | | .000 | |
| 1940 | | | | | | | | | | .000 | |
| 2000 | | | | | | | | | | .000 | |
| 2020 | | | | | | | | | | .000 | |
| 2040 | | | | | | | | | | .000 | |
| 2100 | | | | | | | | | | .000 | |
| 2120 | | | | | | | | | | .000 | |
| 2140 | | | | | | | | | | .000 | |

TABLE A.53 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----|-----------|--------------|-----------------|
| 2200 | | | | | | | | | | | .000 | |
| 2220 | | | | | | | | | | | .000 | |
| 2240 | | | | | | | | | | | .000 | |
| 2300 | | | | | | | | | | | .000 | |
| 2320 | | | | | | | | | | | .000 | |
| 2340 | | | | | | | | | | | .000 | |
| 0000 | | | | | | | | | | | .000 | |
| 0020 | | | | | | | | | | | .000 | |
| 0040 | | | | | | | | | | | .000 | |
| 0100 | | | | | | | | | | | .000 | |
| 0120 | | | | | | | | | | | .000 | |
| 0140 | | | | | | | | | | | .000 | |
| 0200 | | | | | | | | | | | .000 | |
| 0220 | | | | | | | | | | | .000 | |
| 0240 | | | | | | | | | | | .000 | |
| 0300 | 183 | | | | | | | 124 | 000 | .000 | .000 | |
| 0320 | 183 | | | | | | | 088 | 000 | .000 | .000 | |
| 0340 | 179 | | | | | | | 074 | 000 | .000 | .000 | |
| 0400 | 150 | | | | | | | 061 | 000 | .000 | .000 | |
| 0420 | 094 | | | | | | | 053 | 000 | .000 | .000 | |
| 0440 | 025 | | | | | | | 054 | 000 | .000 | .000 | |
| 0500 | 089 | | | | | | | 043 | 000 | .000 | .000 | |
| 0520 | 079 | | | | | | | 040 | 000 | .000 | .000 | |
| 0540 | 071 | | | | | | | 040 | 000 | .000 | .000 | |
| 0600 | 040 | | | | | | | 040 | 000 | .000 | .000 | |
| 0620 | 059 | | | | | | | 040 | 000 | .000 | .000 | |
| 0640 | 092 | | | | | | | 040 | 000 | .000 | .000 | |
| 0700 | 119 | | | | | | | 040 | 000 | .000 | .000 | |
| 0720 | 082 | | | | | | | 040 | 000 | .000 | .000 | |
| 0740 | 067 | | | | | | | 040 | 000 | .000 | .000 | |
| 0800 | 069 | | | | | | | 040 | 000 | .000 | .000 | |
| 0820 | 070 | | | | | | | 040 | 000 | .000 | .000 | |
| 0840 | 080 | | | | | | | 040 | 000 | .000 | .000 | |
| 0900 | 159 | | | | | | | 040 | 000 | .000 | .000 | |
| 0920 | | | | | | | | | | .072 | .000 | |
| 0940 | | | | | | | | | | | .000 | |

TABLE A.54 CANTON TO MIDWAY, BLUE GILL

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|---------|-------------------------------|-------------------------------|--------------------|--------------------|------|-----------|--------------|-----------------|
| | | 153-147 | 140-134 | 127-110 | 126-094 123-094 121-108 | 087-079 087-070 099-092 | 076-070 076-070 | 063-058 063-058 | | | | |
| 1000 | 178 | | | | 126-094 | 087-079 | 076-070 | 066 | .607 | .567 | .486 | |
| 1020 | 216 | | | | 123-094 | 087-070 | 076-070 | 055 | .286 | .476 | .000 | |
| 1040 | 228 | | | | 121-108 | 099-092 | 076-070 | 040 | .173 | .392 | .261 | |
| 1100 | 040 | | | | | | | 040 | B | .309 | .664 | |
| 1120 | 211 | | | 127-110 | 127-091 | 064-060 | 076-070 | 056 | .258 | .363 | .528 | |
| 1140 | 175 | | | | 102-091 | 084-079 | 064-058 | 054 | .355 | .382 | .001 | |
| 1200 | 179 | | | | 121-070 | | 065-058 | 052 | .460 | .404 | .816 | |
| 1220 | 220 | | 152-154 | | 121-072 | | | 054 | .506 | .445 | .562 | |
| 1240 | | | | | | | | | | | .001 | |
| 1300 | | | | | | | | | | | .605 | |
| 1320 | 201 | | | | 176-070 | 063-059 | 063-059 | 055 | .733 | .285 | .365 | |
| 1340 | 137 | | | | 131-071 | 063-060 | | 041 | .688 | .510 | .604 | |
| 1400 | 138 | | | | 120-096 | 084-070 | 066-059 | 056 | .549 | .526 | .001 | |
| 1420 | 138 | | | | 127-081 | 073-070 | 063-060 | 043 | .547 | .386 | .029 | |
| 1440 | | | | | | | | | | | .094 | |
| 1500 | 132 | | | | 124-070 | 062-058 | 062-059 | 040 | .674 | .531 | .357 | |
| 1520 | 134 | | | | 104-094 | 084-080 | 072-070 | 053 | .272 | .101 | .202 | |
| 1540 | 128 | | 120-114 | | 094-090 | 080-068 | 061-077 | 046 | .244 | .388 | .388 | |
| 1600 | 132 | | 124-112 | | 102-092 | 079-070 | 062-060 | 047 | .388 | .285 | .370 | |
| 1620 | 094 | | | | 085-070 | | 062-059 | 040 | .370 | .238 | .072 | |
| 1640 | 074 | | | | | | | 040 | .088 | .351 | .086 | |
| 1700 | 094 | | | | 084-072 | 083-070 | | 040 | .222 | .136 | .000 | |
| 1720 | 134 | | | | 102-094 | | | 051 | .253 | .000 | .000 | |
| 1740 | 138 | | | | 094-079 | | | 062 | .197 | .062 | .062 | |
| 1800 | 231 | | | | | | | 080 | .060 | .322 | .096 | |
| 1820 | 256 | 215-206 | | | 079-070 | | | 063 | .047 | .202 | .095 | |
| 1840 | | | | | | | | | | | .525 | |
| 1900 | 277 | | | | | | | 084 | .000 | .040 | .099 | |
| 1920 | 267 | | | | | | | 085 | .000 | .070 | .108 | |
| 1940 | 304 | | | | | | | 096 | .000 | .094 | .128 | |
| 2000 | 275 | | | | | | | 086 | .000 | .168 | .000 | |
| 2020 | 317 | | | | | | | 107 | .000 | .227 | .000 | |
| 2040 | 333 | | | | | | | 116 | .000 | .211 | .161 | |
| 2100 | 347 | 238-219 | | | | | | 104 | .078 | .232 | .000 | |
| 2120 | 386 | | | | | | | 106 | .000 | .117 | .000 | |
| 2140 | 302 | | 152-138 | | | | | 115 | .075 | .148 | .000 | |

1000 CRT 26 057.

TABLE A.55 KAUAI TO WAKE, BLUE GILL

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD. DAY |
|------|-----|-------------------------------|-------------------------------|-------------------------------|--------------------|--------------------|------------------------------------------|-----------------------------------------------------|------|-----------|--------------|------------------|
| | | 252-231 252-240 251-239 | 191-134 182-153 158-154 | 123-111 120-115 147-115 | 162-104 124-104 | 139-131 123-109 | 062-060 098-094 063-060 082-079 | 079-073 061-059 062-059 054-051 062-058 | | | | |
| 1000 | 318 | | | | | | | 063 | .353 | .256 | .000 | |
| 1020 | 283 | | | | | | | 040 | .198 | .269 | .000 | |
| 1040 | 295 | | | | | | | 040 | .173 | .411 | .000 | |
| 1100 | 313 | | | | | | | 040 | .015 | .166 | .000 | |
| 1120 | 310 | | | | | | | 040 | .259 | .203 | .000 | |
| 1140 | 316 | | | | | | | 041 | .193 | .095 | .000 | |
| 1200 | 400 | | | | | | | 041 | .577 | .000 | .000 | |
| 1220 | 134 | | | | | | | 040 | .000 | .294 | .000 | |
| 1240 | 321 | | | | | | | 040 | .377 | .153 | .000 | |
| 1300 | 093 | | | | | | | 040 | .000 | .309 | .000 | |
| 1320 | 078 | | | | | | | 041 | .135 | .307 | .000 | |
| 1340 | 071 | | | | | | | 040 | .097 | .142 | .000 | |
| 1400 | 068 | | | | | | | 040 | .107 | .059 | .000 | |
| 1420 | 069 | | | | | | | 040 | .103 | .041 | .000 | |
| 1440 | 067 | | | | | | | 040 | .148 | .072 | .000 | |
| 1500 | 062 | | | | | | | 040 | .000 | .268 | .000 | |
| 1520 | 058 | | | | | | | 045 | .000 | .045 | .000 | |
| 1540 | 058 | | | | | | | 045 | .000 | .062 | .000 | |
| 1600 | 068 | | | | | | | 041 | .111 | .056 | .000 | |
| 1620 | | | | | | | | | | | | |
| 1640 | 079 | | | | | | | 045 | .088 | .397 | .000 | |
| 1700 | 065 | | | | | | | 052 | .000 | .256 | .000 | |
| 1720 | 129 | | | | | | | 055 | .122 | .000 | .000 | |
| 1740 | 040 | | | | | | | 040 | B | .053 | .000 | |
| 1800 | 040 | | | | | | | 040 | B | .021 | .000 | |
| 1820 | 185 | | | | | | | 064 | .719 | .166 | .449 | |
| 1840 | 217 | | | | | | | 066 | .600 | .071 | .190 | |
| 1900 | 241 | | | | | | | 096 | .517 | .090 | .270 | |
| 1920 | 285 | | | | | | | 123 | .235 | .101 | .151 | |
| 1940 | 318 | | | | | | | 123 | .175 | .000 | .000 | |
| 2000 | 322 | | | | | | | 123 | .382 | .022 | .040 | |
| 2020 | 320 | | | | | | | 124 | .194 | .012 | .000 | |
| 2040 | 319 | | | | | | | 124 | .138 | .000 | .000 | |
| 2100 | 331 | | | | | | | 127 | .132 | .066 | .000 | |
| 2120 | 322 | | | | | | | 125 | .061 | .236 | .000 | |
| 2140 | 403 | | | | | | | 197 | .000 | .013 | .091 | |

1000 GRZ 26 057.

TABLE A.55 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|--|--|---------|---------|-----|-----------|--------------|-----------------|
| 2200 | 120 | | | | | | | 193 | .000 | .003 | .000 |
| 2220 | 324 | | | | | | | 197 | .000 | .003 | .000 |
| 2240 | 324 | | | | | | | 199 | .000 | .017 | .000 |
| 2300 | 325 | | | | | | | 199 | .000 | .101 | .000 |
| 2320 | 309 | 216-159 | | | | | | 141 | .339 | .000 | .000 |
| 2340 | 321 | | | | | | | 220 | .000 | .000 | .000 |
| 0000 | 320 | 204-161 | 155-149 | | | | | 124 | .250 | .121 | .000 |
| 0020 | 320 | 220-160 | | | | | | 140 | .333 | .105 | .000 |
| 0040 | 298 | 190-158 | | | | | | 124 | .184 | .086 | .000 |
| 0100 | 322 | 215-148 | | | | | | 112 | .319 | .133 | .000 |
| 0120 | 320 | 150-144 | | | | | | 118 | .030 | .079 | .000 |
| 0140 | 314 | 208-159 | | | | | | 109 | .239 | .153 | .000 |
| 0200 | 321 | 178-159 | 150-139 | | | | | 126 | .154 | .158 | .000 |
| 0220 | 324 | 221-177 | | | | | | 117 | .213 | .080 | .000 |
| 0240 | 320 | 186-160 | | | | | | 112 | .125 | .074 | .000 |
| 0300 | 317 | 210-189 | | | | | | 111 | .102 | .060 | .000 |
| 0320 | 318 | 213-159 | | | | | | 111 | .261 | .062 | .000 |
| 0340 | 310 | 212-159 | | | | | | 104 | .257 | .104 | .000 |
| 0400 | 313 | 242-158 | | | | | | 099 | .388 | .114 | .000 |
| 0420 | 301 | 238-158 | | | | | | 073 | .399 | .097 | .069 |
| 0440 | 312 | 222-161 | | | | 098-094 | 088-081 | 063 | .337 | .100 | .058 |
| 0500 | 310 | 251-160 | | | | 107-095 | 087-076 | 062 | .391 | .043 | .000 |
| 0520 | 146 | | | | | 100-096 | | 046 | .040 | .015 | .034 |
| 0540 | 254 | | | | | 100-096 | | 040 | .003 | .000 | .000 |
| 0600 | 261 | 222-163 | | | | 100-095 | | 040 | .299 | .000 | .000 |
| 0620 | 232 | 224-160 | | | | 101-096 | | 040 | .290 | .000 | .000 |
| 0640 | 233 | 173-155 | | | | 105-095 | | 041 | .120 | .049 | .000 |
| 0700 | 235 | | | | | 100-092 | | 040 | .052 | .151 | .000 |
| 0720 | 254 | 178-160 | | | | 102-096 | | 040 | .118 | .071 | .000 |
| 0740 | 289 | 174-158 | | | | | | 040 | .103 | .072 | .090 |
| 0800 | 310 | 173-157 | | | | | | 040 | .000 | .000 | .000 |
| 0820 | 312 | 246-234 | | | | 098-090 | | 040 | .104 | .061 | .000 |
| 0840 | 311 | 240-224 | | | | | | 040 | .088 | .035 | .000 |
| 0900 | 318 | | | | | | | 040 | .000 | .045 | .000 |
| 0920 | 309 | 174-159 | | | | | | 040 | .054 | .171 | .000 |
| 0940 | 309 | 170-159 | | | | | 063-061 | 040 | .078 | .203 | .017 |
| | | 246-234 | | | | | | 040 | .086 | .169 | .000 |

TABLE A.56 KAUAI TO MIDWAY, BLUE GILL

1000 GRT 26 OCT.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 1000 | 092 | | | | | | | 053 | .385 | .143 | .000 |
| 1020 | 074 | | | | | | | 040 | .118 | .165 | .204 |
| 1040 | 074 | | | | | | | 040 | .118 | .410 | .170 |
| 1100 | | | | | | | | | | | .239 |
| 1120 | 077 | | | | | | | 042 | .114 | .145 | .152 |
| 1140 | 073 | | | | | | | 042 | .129 | .172 | .263 |
| 1200 | 085 | | | | | | | 041 | .114 | .211 | .190 |
| 1220 | 089 | | | | | | | 041 | .104 | .215 | .111 |
| 1240 | | | | | | | | | | | .179 |
| 1300 | | | | | | | | | | | .000 |
| 1320 | 057 | | | | | | | 041 | .188 | .266 | .000 |
| 1340 | 059 | | | | | | | 040 | .158 | .124 | .321 |
| 1400 | 065 | | | | | | | 040 | .120 | .112 | .278 |
| 1420 | 120 | | | | | | | 040 | .300 | .278 | .000 |
| 1440 | 065 | | | | | | | 040 | .160 | .467 | .000 |
| 1500 | 073 | | | | | | | 040 | .121 | .083 | .250 |
| 1520 | 070 | | | | | | | 040 | .167 | .294 | .308 |
| 1540 | 057 | | | | | | | 040 | .176 | .105 | .364 |
| 1600 | 061 | | | | | | | 040 | .143 | .252 | .375 |
| 1620 | 045 | | | | | | | 040 | .000 | .126 | .156 |
| 1640 | 061 | | | | | | | 040 | .143 | .183 | .200 |
| 1700 | 072 | | | | | | | 040 | .188 | .159 | .250 |
| 1720 | 093 | | | | | | | 047 | .000 | .083 | .000 |
| 1740 | 112 | | | | | | | 051 | .000 | .049 | .049 |
| 1800 | 260 | | | | | | | 106 | .039 | .083 | .083 |
| 1820 | 141 | | | | | | | 054 | .000 | .093 | .000 |
| 1840 | | | | | | | | | | | .043 |
| 1900 | 152 | | | | | | | 048 | .000 | .079 | .059 |
| 1920 | 172 | | | | | | | 055 | .000 | .046 | .000 |
| 1940 | 235 | | | | | | | 057 | .067 | .053 | .044 |
| 2000 | 261 | | | | | | | 055 | .184 | .026 | .000 |
| 2020 | 271 | | | | | | | 062 | .191 | .125 | .242 |
| 2040 | 287 | | | | | | | 062 | .022 | .023 | .069 |
| 2100 | 274 | | | | | | | 063 | .242 | .104 | .101 |
| 2120 | 274 | | | | | | | 071 | .148 | .104 | .102 |
| 2140 | 296 | | | | | | | 071 | .262 | .061 | .048 |

TABLE A.56 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|---------|---------|--|--|-----|------|-----------|--------------|-----------------|
| 2200 | 304 | 204-182 | 145-132 | 101-090 | | | | 073 | .199 | .180 | .060 | |
| 2220 | | | | | | | | | | | .000 | |
| 2240 | 318 | 158-134 | | | | | | 108 | .114 | .008 | .075 | |
| 2300 | 316 | 251-220 | | | | | | 196 | .258 | .000 | .024 | |
| 2320 | 315 | 234-207 | | | | | | 144 | .409 | .000 | .000 | |
| 2340 | 312 | 196-153 | 160-130 | | | | | 107 | .259 | .062 | .187 | |
| 0000 | 306 | 194-171 | 156-146 | | | | | 136 | .265 | .075 | .225 | |
| 0020 | 299 | 203-168 | | | | | | 141 | .310 | .024 | .000 | |
| 0040 | 290 | 190-157 | | | | | | 115 | .406 | .000 | .000 | |
| 0100 | 270 | 207-136 | | | | | | 098 | .634 | .000 | .074 | |
| 0120 | 270 | 254-182 | 157-129 | 116-107 | | | | 127 | .578 | .072 | .013 | |
| 0140 | 229 | 195-155 | 143-135 | 113-080 | | | | 076 | .416 | .007 | .013 | |
| 0200 | 237 | 194-160 | | 094-081 | | | | 077 | .156 | .021 | .015 | |
| 0220 | 224 | 195-185 | | 093-081 | | | | 075 | .094 | .008 | .017 | |
| 0240 | 203 | | | | | | | 062 | .473 | .010 | .018 | |
| 0300 | 201 | 142-132 | | | | | | 100 | .000 | .010 | .000 | |
| 0320 | 208 | | | | 096-068 | | | | .000 | .000 | .000 | |
| 0340 | | | | | | | | | | | | |
| 0400 | 213 | | | | | | | 113 | .000 | .011 | .021 | |
| 0420 | 190 | | | 093-081 | | | | 076 | .175 | .012 | .034 | |
| 0440 | 187 | | 125-117 | | | | | 102 | .000 | .011 | .032 | |
| 0500 | 191 | | | 088-081 | | | | 064 | .055 | .011 | .000 | |
| 0520 | 190 | | | | | | | 048 | .000 | .000 | .000 | |
| 0540 | 194 | | | 107-094 | | | | 048 | .111 | .047 | .140 | |
| 0600 | 240 | | | | | | | 040 | .020 | .058 | .031 | |
| 0620 | 242 | | | | | | | 040 | .020 | .000 | .117 | |
| 0640 | 228 | 190-185 | | | | | | 040 | .090 | .089 | .034 | |
| 0700 | 243 | 216-209 | | | | | | 040 | .103 | .056 | .341 | |
| 0720 | 186 | 236-225 | | | | | | 040 | .027 | .114 | .179 | |
| 0740 | 184 | | | | | | | 040 | .049 | .060 | .000 | |
| 0800 | 160 | 144-138 | 124-115 | 099-092 | | | | 040 | .208 | .194 | .528 | |
| 0820 | 132 | | 127-117 | 095-090 | | | | 040 | .196 | .174 | .079 | |
| 0840 | 115 | | | | | | | 040 | .000 | .135 | .000 | |
| 0900 | 118 | | | | | | | 040 | .000 | .081 | .000 | |
| 0920 | 113 | | | | | | | 040 | .000 | .179 | .000 | |
| 0940 | 122 | | | 085-079 | | | | 040 | .134 | .170 | .077 | |
| | | | | | | | | 040 | | | .000 | |

TABLE A.57 CANTON TO HAWAII, BLUE GILL

1000 GRT 26 OCT.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--------------------|--|--|-----|-----------|--------------|-----------------|
| 1000 | 400 | | | | | | | 041 | 000 | .000 | .000 |
| 1020 | 385 | | | | | | | 041 | 000 | .000 | .000 |
| 1040 | | | | | | | | | | | |
| 1100 | 358 | | | | | | | 041 | 000 | .000 | .000 |
| 1120 | 351 | | | | | | | 041 | 000 | .016 | .000 |
| 1140 | 306 | | | | | | | 041 | 000 | .000 | .000 |
| 1200 | 273 | 155-153 | | | | | | 041 | .022 | .010 | .000 |
| 1220 | 251 | | | | 073-070 077-071 | | | 041 | .029 | .014 | .000 |
| 1240 | 187 | | | | | | | 041 | 000 | .000 | .000 |
| 1300 | 141 | | | | | | | 043 | 000 | .000 | .000 |
| 1320 | 224 | | | | | | | 041 | 000 | .012 | .000 |
| 1340 | 217 | 161-157 | | | | | | 041 | 000 | .008 | .000 |
| 1400 | 199 | | | | | | | 041 | 000 | .000 | .000 |
| 1420 | 215 | | | | | | | 040 | 000 | .000 | .000 |
| 1440 | 204 | | | | | | | 040 | 000 | .000 | .000 |
| 1500 | 199 | | | | | | | 040 | .030 | .077 | .061 |
| 1520 | | | | | | | | 041 | 000 | .043 | .118 |
| 1540 | | | | | | | | | | | .300 |
| 1600 | | | | | | | | | | | .133 |
| 1620 | | | | | | | | | | | .000 |
| 1640 | 170 | | | | | | | | | | .215 |
| 1700 | 168 | | | | | | | 041 | 000 | .133 | .021 |
| 1720 | 195 | | | | | | | 043 | .080 | .011 | .031 |
| 1740 | 239 | | | | | | | 041 | .026 | .092 | .000 |
| 1800 | 303 | | | | | | | 046 | 000 | .008 | .000 |
| 1820 | | | | | | | | 046 | 000 | .008 | .000 |
| 1840 | 324 | | | | | | | | | | .000 |
| 1900 | 328 | | | | | | | 051 | 000 | .000 | .000 |
| 1920 | 333 | | | | | | | 053 | 000 | .000 | .000 |
| 1940 | 320 | | | | | | | 057 | 000 | .000 | .000 |
| 2000 | 297 | | | | | | | 061 | 000 | .004 | .000 |
| 2020 | 291 | | | | | | | 067 | 000 | .000 | .000 |
| 2040 | 295 | | | | | | | 074 | 000 | .000 | .000 |
| 2100 | 307 | | | | | | | 074 | .018 | .000 | .000 |
| 2120 | 295 | | | | 080-076 | | | 093 | 000 | .000 | .000 |
| 2140 | | | | | | | | 081 | 000 | .000 | .000 |

TABLE A.57 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|---------|-----------|--------------|-----------------|
| 2200 | | | | | | | | 062 | 000 | .000 | .000 |
| 2220 | 359 | | | | | | | 103 | 000 | .000 | .000 |
| 2240 | 640 | | | | | | | 066 | 000 | .000 | .000 |
| 2300 | 401 | | | | | | | 063 | 000 | .000 | .000 |
| 2320 | 405 | | | | | | | 059 | 000 | .000 | .000 |
| 2340 | 385 | | | | | | | 059 | 000 | .000 | .000 |
| 0020 | 375 | | | | | | | 061 | 000 | .000 | .000 |
| 0040 | 357 | | | | | | | 053 | 000 | .000 | .000 |
| 0100 | 357 | | | | | | | 059 | 000 | .000 | .000 |
| 0120 | 375 | | | | | | | 056 | 000 | .000 | .000 |
| 0140 | 385 | | | | | | | 053 | 000 | .000 | .000 |
| 0200 | | | | | | | | 056 | 000 | .000 | .000 |
| 0220 | 423 | | | | | | | 053 | 000 | .000 | .000 |
| 0240 | 451 | | | | | | | 047 | 000 | .000 | .000 |
| 0300 | 461 | | | | | | | 049 | 005 | .000 | .010 |
| 0320 | 451 | | | | | | | 063 | .111 | .005 | .000 |
| 0340 | 432 | | | | | | | 063 | .062 | .000 | .000 |
| 0400 | 383 | | | | | | | 059 | 000 | .003 | .000 |
| 0420 | 400 | | | | | | | 045 | 000 | .000 | .000 |
| 0440 | 420 | | | | | | | 040 | 000 | .000 | .000 |
| 0500 | 360 | | | | | | | 040 | 000 | .000 | .000 |
| 0520 | 340 | | | | | | | 040 | 000 | .000 | .000 |
| 0540 | 320 | | | | | | | 040 | 000 | .000 | .000 |
| 0600 | | | | | | | | 040 | 000 | .000 | .000 |
| 0620 | 574 | | | | | | | 042 | 000 | .006 | .000 |
| 0640 | 633 | | | | | | | 039 | 000 | .000 | .000 |
| 0700 | 640 | | | | | | | 039 | 000 | .000 | .000 |
| 0720 | 638 | | | | | | | 045 | .003 | .006 | .000 |
| 0740 | 638 | | | | | | | 042 | 000 | .000 | .000 |
| 0800 | 633 | | | | | | | 046 | 000 | .000 | .000 |
| 0820 | 641 | | | | | | | 041 | .005 | .000 | .000 |
| 0840 | | | | | | | | 048-045 | | .000 | .000 |
| 0900 | 631 | | | | | | | 041 | 000 | .010 | .000 |
| 0920 | 605 | | | | | | | 041 | .000 | .000 | .010 |
| 0940 | 599 | | | | | | | 046 | 000 | .000 | .000 |

TABLE A.58 CANTON TO TUTUILA, BLUE GILL

1000 GMT 26 OCT.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|---------|--|---------|--|-----|-----------|--------------|-----------------|
| 1000 | 280 | | | | | | | 040 | .050 | .000 | .000 |
| 1020 | 184 | | | | | | | 040 | .000 | .000 | .000 |
| 1040 | 173 | | | | | | | 040 | .000 | .000 | .000 |
| 1100 | 177 | | | | | | | 040 | .000 | .036 | .000 |
| 1120 | 173 | | | | | | | 040 | .000 | .000 | .000 |
| 1140 | 224 | | | | | | | 040 | .250 | .000 | .000 |
| 1200 | 397 | | | 210-172 | | | | 040 | .174 | .159 | .000 |
| 1220 | 237 | | 284-241 | 189-170 | | | | 040 | .000 | .000 | .000 |
| 1240 | 308 | | | | | | | 040 | .000 | .000 | .000 |
| 1300 | 274 | | | | | | | 040 | .000 | .000 | .000 |
| 1320 | 297 | | | | | | | 040 | .000 | .010 | .000 |
| 1340 | 187 | | | | | | | 040 | .000 | .022 | .000 |
| 1400 | | | | | | | | | | | |
| 1420 | 273 | | | | | | | 040 | .000 | .334 | .389 |
| 1440 | 231 | | | | | | | 040 | .000 | .000 | .000 |
| 1500 | 318 | | | | | 276-234 | | 040 | .151 | .003 | .000 |
| 1520 | 188 | | | | | | | 040 | .000 | .059 | .000 |
| 1540 | 238 | | | | | | | 040 | .000 | .108 | .323 |
| 1600 | 238 | | | | | | | 040 | .000 | .000 | .000 |
| 1620 | 299 | | | | | | | 040 | .097 | .000 | .000 |
| 1640 | 251 | | | | | 264-239 | | 040 | .000 | .000 | .000 |
| 1700 | 230 | | | | | | | 043 | .155 | .000 | .000 |
| 1720 | 203 | | | | | | | 041 | .093 | .000 | .000 |
| 1740 | 232 | | | | | | | 040 | .042 | .000 | .000 |
| 1800 | 236 | | | | | | | 040 | .066 | .049 | .000 |
| 1820 | 229 | | | | | | | 040 | .000 | .035 | .000 |
| 1840 | 230 | | | | | | | 041 | .000 | .000 | .000 |
| 1900 | 235 | | | | | | | 040 | .000 | .047 | .141 |
| 1920 | 235 | | | | | | | 040 | .000 | .076 | .000 |
| 1940 | 255 | | | | | | | 040 | .000 | .000 | .000 |
| 2000 | 233 | | | | | | | 040 | .000 | .000 | .000 |
| 2020 | 269 | | | | | | | 040 | .000 | .000 | .000 |
| 2040 | 266 | | | | | | | 040 | .000 | .000 | .000 |
| 2100 | 241 | | | | | | | 040 | .000 | .090 | .000 |
| 2120 | 243 | | | | | | | 040 | .000 | .000 | .000 |
| 2140 | 276 | | | | | | | 040 | .000 | .000 | .000 |

TABLE A.58 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|---------|-----|-----------|--------------|-----------------|
| 2200 | 316 | | | | | | | 040 | 000 | .000 | .000 |
| 2220 | 269 | | | | | | | 040 | 000 | .000 | .000 |
| 2240 | 208 | | | | | | | 040 | 000 | .000 | .000 |
| 2300 | 210 | | | | | | | 040 | 000 | .000 | .000 |
| 2320 | 206 | | | | | | | 040 | 000 | .000 | .000 |
| 2340 | | | | | | | | | | | |
| 0000 | | | | | | | | | | | |
| 0020 | 221 | | | | | | | 040 | 000 | .000 | .000 |
| 0040 | 226 | | | | | | | 040 | 000 | .000 | .000 |
| 0100 | 230 | | | | | | | 040 | 000 | .000 | .000 |
| 0120 | 251 | | | | | | | 040 | 000 | .000 | .000 |
| 0140 | 222 | | | | | | | 040 | .062 | .000 | .000 |
| 0200 | 224 | | | | | | | 040 | 000 | .000 | .000 |
| 0220 | 259 | | | | | | | 040 | 000 | .000 | .000 |
| 0240 | 244 | | | | | | | 040 | 000 | .000 | .000 |
| 0300 | 246 | | | | | | | 040 | 000 | .000 | .000 |
| 0320 | 265 | | | | | | | 040 | 000 | .000 | .000 |
| 0340 | 252 | | | | | | | 040 | 000 | .000 | .000 |
| 0400 | 310 | | | | | | | 040 | 000 | .000 | .000 |
| 0420 | 308 | | | | | | | 040 | 000 | .000 | .000 |
| 0440 | 338 | | | | | | | 040 | 000 | .000 | .000 |
| 0500 | 392 | | | | | | | 040 | 000 | .000 | .000 |
| 0520 | 432 | | | | | | | 040 | 000 | .000 | .000 |
| 0540 | 480 | | | | | | | 040 | 000 | .000 | .000 |
| 0600 | 040 | | | | | | | 040 | 000 | .000 | .000 |
| 0620 | | | | | | | | 040 | B | .082 | .163 |
| 0640 | 452 | | | | | | | 040 | 000 | .122 | .000 |
| 0700 | 467 | | | | | | | 040 | 000 | .122 | .244 |
| 0720 | 365 | | | | | | | 040 | 000 | .000 | .244 |
| 0740 | 451 | | | | | | | 040 | 000 | .000 | .000 |
| 0800 | 479 | | | | | | | 040 | 000 | .152 | .457 |
| 0820 | 552 | | | | | | | 040 | 000 | .081 | .242 |
| 0840 | 546 | | | | | | | 040 | 000 | .057 | .169 |
| 0900 | 625 | | | | | | | 040 | 000 | .000 | .000 |
| 0920 | 562 | | | | | | | 040 | 000 | .070 | .000 |
| 0940 | 443 | | | | | | 398-379 | 040 | .047 | .106 | .144 |
| | | | | | | | | 040 | | .018 | .000 |

TABLE A.60 ROI-NAMUR TO RAROTONGA, BLUE GILL

1000 GMT 26 OCT.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|---------|---------|---------|---------|-----|-----------|--------------|-----------------|
| 1000 | 258 | | | | 110-102 | 075-072 | 062-059 | 051-049 | 040 | .133 | .083 | .000 |
| 1020 | 267 | | | | 102-094 | 073-068 | 062-059 | 051-046 | 040 | .379 | .007 | .000 |
| 1040 | 263 | | | | 123-116 | 085-079 | 075-068 | 062-059 | 040 | .309 | .035 | .000 |
| 1100 | 269 | 256-225 | | | 125-091 | 083-069 | 075-068 | 062-047 | 044 | .627 | .002 | .000 |
| 1120 | 285 | | | | 125-117 | 105-091 | 084-068 | 063-057 | 063 | .500 | .038 | .000 |
| 1140 | 281 | | | | 125-134 | 086-069 | 063-060 | 055-047 | 042 | .326 | .036 | .000 |
| 1200 | 296 | 206-200 | | | 110-095 | 104-090 | 076-069 | 063-057 | 044 | .357 | .031 | .000 |
| 1220 | 040 | 280-266 | | | 155-135 | | | | 040 | B | .128 | .317 |
| 1240 | 293 | | | | 109-092 | 083-066 | 062-058 | 055-047 | 054 | .201 | .038 | .000 |
| 1300 | 265 | | | | 102-089 | 077-068 | 065-059 | 055-048 | 055 | .090 | .126 | .000 |
| 1320 | 285 | | | | | 076-068 | 063-059 | 054-047 | 045 | .084 | .064 | .000 |
| 1340 | 264 | 209-196 | | | | | | | 042 | .081 | .062 | .000 |
| 1400 | | | | | | | | | | | .000 | .000 |
| 1420 | | | | | | | | | | | .000 | .000 |
| 1440 | 231 | | | | | | | | | | .165 | .000 |
| 1500 | 231 | 210-194 | | | 101-093 | 081-079 | 072-068 | 054-050 | 040 | .262 | .090 | .000 |
| 1520 | 212 | | | | | 074-068 | 061-057 | | 048 | .142 | .211 | .045 |
| 1540 | 263 | 243-224 | | | | 065-060 | 062-058 | 052-048 | 044 | .025 | .141 | .032 |
| 1600 | | | | | | | | | | .128 | .026 | .000 |
| 1620 | 217 | | | | | | | | 040 | .000 | .092 | .000 |
| 1640 | 234 | | | | | | | | 041 | .016 | .010 | .000 |
| 1700 | 269 | | | | | | | | 044 | .000 | .218 | .000 |
| 1720 | 280 | 215-204 | | | 086-080 | 075-070 | | | 044 | .093 | .308 | .000 |
| 1740 | 277 | | | | | | | | 041 | .000 | .211 | .000 |
| 1800 | | 254-237 | | | 083-077 | 073-069 | | | 062 | .209 | .103 | .037 |
| 1820 | 277 | | | | | | | | | | .299 | .091 |
| 1840 | 265 | | | | | | | | 063 | .050 | .051 | .000 |
| 1900 | 281 | | | | 103-097 | 072-068 | | | 081 | .030 | .004 | .000 |
| 1920 | 308 | | | | 082-077 | | | | 074 | .021 | .010 | .000 |
| 1940 | | | | | | | | | | | .010 | .000 |
| 2000 | 318 | | | | 083-077 | | | | 075 | .025 | .010 | .011 |
| 2020 | 318 | | | | | | | | 085 | .000 | .041 | .000 |
| 2040 | 339 | | | | | | | | 090 | .000 | .003 | .009 |
| 2100 | 346 | | | | | | | | 092 | .000 | .038 | .000 |
| 2120 | 362 | | | | | | | | 102 | .000 | .050 | .000 |
| 2140 | 335 | | | | | | | | 091 | .000 | .097 | .000 |

TABLE A.60 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 2200 | 433 | | | | | | | 099 | 000 | .050 | .000 |
| 2220 | 458 | | | | | | | 101 | 000 | .000 | .000 |
| 2300 | 426 | | | | | | | 102 | 000 | .167 | .000 |
| 2320 | | | | | | | | | | | .000 |
| 2340 | | | | | | | | | | | .006 |
| 0000 | | | | | | | | | | | .046 |
| 0020 | 439 | | | | | | | 105 | 000 | .000 | .000 |
| 0040 | 459 | | | | | | | 092 | 000 | .000 | .000 |
| 0100 | 358 | | | | | | | 106 | 000 | .000 | .000 |
| 0120 | 432 | | | | | | | 092 | 000 | .000 | .000 |
| 0140 | 340 | | | | | | | 102 | 000 | .005 | .000 |
| 0200 | 441 | | | | | | | 105 | 000 | .104 | .213 |
| 0220 | 393 | | | | | | | 095 | 000 | .000 | .000 |
| 0240 | 354 | | | | | | | 099 | 000 | .000 | .000 |
| 0300 | 379 | | | | | | | 085 | 000 | .000 | .000 |
| 0320 | 399 | | | | | | | 105 | 000 | .000 | .000 |
| 0340 | 482 | | | | | | | 110 | 000 | .293 | .000 |
| 0400 | 449 | | | | | | | 110 | 000 | .140 | .000 |
| 0420 | 349 | | | | | | | 101 | 000 | .163 | .057 |
| 0440 | 402 | | | | | | | 085 | 000 | .171 | .095 |
| 0500 | 382 | | | | | | | 087 | 000 | .084 | .000 |
| 0520 | 372 | | | | | | | 087 | 000 | .017 | .000 |
| 0540 | | | | | | | | | | | .000 |
| 0600 | 346 | | | | | | | 053 | 000 | .000 | .000 |
| 0620 | 351 | | | | | | | 042 | 000 | .000 | .000 |
| 0640 | 308 | | | | | | | 041 | 000 | .067 | .000 |
| 0700 | 299 | | | | | | | 040 | .012 | .027 | .000 |
| 0720 | 299 | | | | | | | 040 | 000 | .211 | .000 |
| 0740 | | | | | | | | | | | .000 |
| 0800 | | | | | | | | | | | .000 |
| 0820 | | | | | | | | | | | .000 |
| 0840 | 273 | | | | | | | 040 | 000 | .012 | .000 |
| 0900 | 217 | | | | | | | 040 | .023 | .026 | .000 |
| 0920 | 261 | | | | | | | 040 | 000 | .163 | .027 |
| 0940 | 232 | | | | | | | 040 | 000 | .048 | .000 |

TABLE A.61 ROI-NAMUR TO HAWAII, KING FISH

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|-------------------------------|--|--|--|-----|-----------|--------------|-----------------|
| 1200 | 216 | | | | | | | 126 | 000 | .110 | .220 |
| 1220 | 167 | | | | | | | 063 | .365 | .071 | .000 |
| 1300 | 139 | 158-150 | | | | | | 043 | .188 | .280 | .071 |
| 1320 | 141 | | | | | | | 044 | .360 | .391 | .280 |
| 1340 | 143 | | | | | | | 040 | .052 | .447 | .391 |
| 1400 | 139 | | | 105-093 | | | | 040 | .068 | .154 | .154 |
| 1420 | 140 | | | 081-076 082-078 111-103 | | | | 047 | .174 | .203 | .194 |
| 1440 | 141 | | | | | | | 040 | .000 | .257 | .257 |
| 1500 | 040 | | | | | | | 047 | .000 | .057 | .000 |
| 1520 | 040 | | | | | | | 040 | .435 | .579 | .579 |
| 1540 | 182 | | | | | | | 040 | .289 | .504 | .504 |
| 1600 | 140 | | | 081-079 | | | | 040 | .277 | .424 | .424 |
| 1620 | 141 | | | | | | | 040 | .055 | .053 | .053 |
| 1640 | 135 | | | | | | | 040 | .270 | .313 | .313 |
| 1700 | | | | | | | | 040 | .248 | .281 | .281 |
| 1720 | 134 | | | | | | | 045 | .058 | .115 | .115 |
| 1740 | 139 | | | | | | | 044 | .432 | .060 | .000 |
| 1800 | 181 | | | | | | | 121 | .000 | .129 | .015 |
| 1820 | 254 | | | | | | | 048 | .029 | .022 | .000 |
| 1840 | 277 | | | 107-071 | | | | 055 | .000 | .000 | .000 |
| 1900 | 277 | | | | | | | 061 | .000 | .000 | .000 |
| 1920 | 301 | | | | | | | 061 | .000 | .000 | .000 |
| 1940 | 317 | | | | | | | 065 | .000 | .000 | .000 |
| 2000 | 337 | 289-239 | | | | | | 067 | .185 | .037 | .006 |
| 2020 | 321 | | | | | | | 074 | .005 | .000 | .000 |
| 2040 | 304 | | | | | | | 098 | .147 | .024 | .000 |
| 2100 | 302 | | | | | | | 099 | .000 | .055 | .000 |
| 2120 | 326 | | | | | | | 098 | .000 | .000 | .000 |
| 2140 | 336 | | | | | | | 098 | .000 | .000 | .000 |
| 2200 | 350 | | | | | | | 107 | .000 | .009 | .000 |
| 2220 | 376 | | | | | | | 097 | .000 | .023 | .000 |
| 2240 | 399 | | | | | | | 096 | .000 | .008 | .017 |
| 2300 | 407 | | | | | | | 096 | .000 | .000 | .000 |
| 2320 | 422 | | | | | | | 096 | .000 | .013 | .027 |
| 2340 | 430 | | | | | | | 089 | .000 | .000 | .000 |
| | | | | | | | | | .046 | .138 | .138 |

TABLE A.61 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|--|---------|-----|------|-----------|--------------|-----------------|
| 0000 | 399 | | | | | | 087 | 000 | .014 | .000 | |
| 0020 | 414 | | | | | | 090 | 000 | .212 | .228 | |
| 0040 | 394 | | | | | | 074 | 000 | .152 | .106 | |
| 0100 | 410 | | | | | | 066 | .012 | .073 | .170 | |
| 0140 | 407 | | | | | | 069 | .047 | .025 | .046 | |
| 0200 | 407 | 335-319 | | | | | 065 | .061 | .036 | .064 | |
| 0240 | 348 | | | 095-091 | | | 065 | 000 | .056 | .127 | |
| 0300 | 352 | | | 099-091 | | | 065 | 000 | .072 | .041 | |
| 0320 | 339 | | | 095-083 | | | 063 | .058 | .197 | .216 | |
| 0340 | 403 | | | 094-088 | | | 062 | .012 | .199 | .321 | |
| 0400 | 422 | | | 075-071 | | | 063 | 000 | .032 | .070 | |
| 0440 | 440 | | | 073-071 | | | 064 | .005 | .106 | .084 | |
| 0480 | 436 | | | 073-070 | | | 065 | .008 | .187 | .379 | |
| 0500 | 461 | | | | | | 045 | 000 | .115 | .344 | |
| 0520 | 546 | | | | | | 044 | .119 | .153 | .287 | |
| 0540 | 339 | | | | | 408-359 | 041 | 000 | .000 | .000 | |
| 0600 | 338 | | | | | | 040 | 000 | .004 | .000 | |
| 0620 | 353 | | | | | | 040 | 000 | .008 | .000 | |
| 0640 | 341 | | | | | | 040 | 000 | .011 | .033 | |
| 0700 | 337 | | | | | | 040 | 000 | .044 | .088 | |
| 0720 | 337 | | | | | | 040 | 000 | .036 | .108 | |
| 0740 | 322 | | | | | | 040 | 000 | .012 | .022 | |
| 0800 | 274 | | | | | | 040 | 000 | .051 | .000 | |
| 0820 | 292 | | | | | | 040 | 000 | .048 | .000 | |
| 0840 | 172 | | | | | | 040 | 000 | .122 | .000 | |
| 0900 | 248 | | | | | | 040 | 000 | .086 | .077 | |
| 0920 | 254 | | | | | | 040 | 000 | .197 | .180 | |
| 0940 | 239 | | | | | | 040 | 000 | .147 | .000 | |
| 1000 | 240 | | | | | | 040 | 000 | .266 | .308 | |
| 1020 | 247 | | | | | | 043 | 000 | .307 | .298 | |
| 1040 | 255 | | | | | | 040 | 000 | .140 | .000 | |
| 1100 | 268 | | | | | | 044 | 000 | .136 | .145 | |
| 1120 | 276 | | | | | | 040 | 000 | .144 | .154 | |
| 1140 | 265 | | | | | | 040 | 000 | .138 | .000 | |

TABLE A.62 ROI-NAMUR TO KAUAI, KING FISH

1230 GMT 1 NOV.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 1200 | 130 | | | | | | | 040 | 000 | .000 | .000 |
| 1220 | 204 | | | | | | | 123 | 000 | .000 | .000 |
| 1240 | 200 | | | | | | | 040 | .275 | .000 | .000 |
| 1320 | 137 | | | | | | | 040 | 000 | .000 | .000 |
| 1340 | 140 | | | | | | | 040 | 000 | .000 | .000 |
| 1400 | 140 | | | | | | | 040 | .160 | .000 | .000 |
| 1420 | 140 | | | | | | | 040 | 000 | .000 | .000 |
| 1440 | 132 | | | | | | | 040 | .022 | .000 | .000 |
| 1500 | | | | | | | | 040 | 000 | .000 | .000 |
| 1520 | | | | | | | | 040 | 000 | .000 | .000 |
| 1540 | | | | | | | | 040 | 000 | .000 | .000 |
| 1600 | 137 | | | | | | | 040 | 000 | .000 | .000 |
| 1620 | 140 | | | | | | | 040 | 000 | .000 | .000 |
| 1640 | | | | | | | | 040 | 000 | .000 | .000 |
| 1700 | 133 | | | | | | | 040 | 000 | .000 | .000 |
| 1720 | 131 | | | | | | | 040 | 000 | .000 | .000 |
| 1740 | | | | | | | | 040 | 000 | .000 | .000 |
| 1800 | 580 | | | | | | | 040 | 000 | .000 | .000 |
| 1820 | 191 | | | | | | | 040 | 000 | .000 | .000 |
| 1840 | | | | | | | | 040 | 000 | .000 | .000 |
| 1900 | 268 | | | | | | | 047 | 000 | .000 | .000 |
| 1920 | 264 | | | | | | | 059 | 000 | .000 | .000 |
| 1940 | | | | | | | | 065 | 000 | .000 | .000 |
| 2000 | 304 | | | | | | | 072 | 000 | .000 | .000 |
| 2020 | 310 | | | | | | | 073 | 000 | .000 | .000 |
| 2040 | | | | | | | | 083 | 000 | .000 | .000 |
| 2100 | 278 | | | | | | | 086 | 000 | .000 | .000 |
| 2120 | 296 | | | | | | | 097 | 000 | .000 | .000 |
| 2140 | | | | | | | | | 000 | .000 | .000 |
| 2200 | 317 | | | | | | | | 000 | .000 | .000 |
| 2220 | | | | | | | | | 000 | .000 | .000 |
| 2240 | | | | | | | | | 000 | .000 | .000 |
| 2300 | 355 | | | | | | | 096 | 000 | .017 | .000 |
| 2320 | 373 | | | | | | | 111 | 000 | .000 | .000 |
| 2340 | | | | | | | | | 000 | .000 | .000 |

TABLE A.62 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0000 | 400 | | | | | | | 104 | .155 | .027 | .000 |
| 0020 | 402 | | | | | | | 110 | .000 | .000 | .000 |
| 0040 | | | | | | | | | | | .000 |
| 0100 | 409 | 387-361 | | | | | | 105 | .194 | .000 | .000 |
| 0120 | 408 | 375-309 | | | | | | 107 | .219 | .003 | .000 |
| 0140 | | | | | | | | | | | .000 |
| 0200 | 410 | 332-317 | | | | | | 106 | .049 | .000 | .000 |
| 0220 | 297 | | | | | | | 082 | .000 | .000 | .000 |
| 0240 | | | | | | | | | | | .000 |
| 0300 | 396 | 355-326 | | | | | | 078 | .091 | .000 | .000 |
| 0320 | 393 | | | | | | | 074 | .009 | .000 | .000 |
| 0340 | | | | | | | | | | | .000 |
| 0400 | 467 | | | | | | | 061 | .296 | .000 | .000 |
| 0420 | 476 | 428-308 | | | | | | 054 | .268 | .000 | .000 |
| 0440 | | 423-310 | | | | | | | | | .000 |
| 0500 | 484 | | | | | | | 040 | .173 | .000 | .000 |
| 0520 | 419 | 430-353 | | | | | | 040 | .166 | .000 | .000 |
| 0540 | | 397-347 | | | | | | | | | .000 |
| 0600 | 384 | | | | | | | 040 | .000 | .000 | .000 |
| 0620 | 397 | | | | | | | 040 | .000 | .000 | .000 |
| 0640 | | | | | | | | | | | .000 |
| 0700 | 381 | | | | | | | 040 | .000 | .000 | .000 |
| 0720 | 372 | | | | | | | 040 | .036 | .000 | .000 |
| 0740 | | | | | | | | | | | .000 |
| 0800 | 322 | | | | | | | 040 | .000 | .000 | .000 |
| 0820 | 287 | | | | | | | 040 | .000 | .000 | .000 |
| 0840 | | | | | | | | | | | .000 |
| 0900 | 223 | | | | | | | 040 | .000 | .000 | .000 |
| 0920 | 224 | | | | | | | 040 | .000 | .000 | .000 |
| 0940 | | | | | | | | | | | .000 |
| 1000 | 232 | | | | | | | 040 | .000 | .000 | .000 |
| 1020 | 231 | | | | | | | 040 | .000 | .000 | .000 |
| 1040 | | | | | | | | | | | .000 |
| 1100 | 250 | | | | | | | 040 | .000 | .000 | .000 |
| 1120 | | | | | | | | | | | .000 |
| 1140 | | | | | | | | | | | .000 |

TABLE A.63 CANTON TO FAIRBANKS, KING FISH

1230 GRT 1. INT.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | DAVED AVERAGE | SINGLE BINED DAY |
|------|-----|---------------------|--|--|--|---------|--|-----|-----------|---------------|------------------|
| 1200 | 078 | | | | | | | 040 | 000 | .000 | .000 |
| 1220 | 077 | | | | | | | 048 | .621 | .000 | .000 |
| 1240 | 068 | | | | | | | 041 | .000 | .000 | .000 |
| 1300 | 040 | | | | | | | 040 | .000 | .000 | .000 |
| 1320 | 040 | | | | | | | 040 | .000 | .000 | .000 |
| 1340 | 040 | | | | | | | 040 | .000 | .000 | .000 |
| 1400 | 040 | | | | | | | 040 | .000 | .000 | .000 |
| 1420 | 040 | | | | | | | 040 | .000 | .000 | .000 |
| 1440 | 040 | | | | | | | 040 | .000 | .000 | .000 |
| 1500 | 040 | | | | | | | 040 | .000 | .000 | .000 |
| 1520 | 040 | | | | | | | 040 | .000 | .000 | .000 |
| 1540 | 067 | | | | | | | 041 | .000 | .000 | .000 |
| 1600 | 067 | | | | | | | 042 | .000 | .000 | .000 |
| 1620 | 074 | | | | | | | 043 | .000 | .000 | .000 |
| 1640 | 071 | | | | | | | 040 | .000 | .000 | .000 |
| 1700 | 073 | | | | | | | 072 | .011 | .000 | .000 |
| 1720 | 147 | | | | | | | 040 | .000 | .000 | .000 |
| 1740 | 152 | | | | | | | 064 | .006 | .000 | .000 |
| 1800 | 198 | | | | | | | 107 | .000 | .000 | .000 |
| 1820 | 195 | | | | | | | 106 | .000 | .000 | .000 |
| 1840 | 219 | | | | | | | 126 | .000 | .000 | .000 |
| 1900 | 198 | | | | | | | 125 | .000 | .000 | .000 |
| 1920 | 235 | | | | | | | 130 | .000 | .000 | .000 |
| 1940 | | | | | | | | | .000 | .000 | .000 |
| 2000 | 273 | | | | | | | 143 | .000 | .000 | .000 |
| 2020 | 262 | | | | | | | 146 | .000 | .000 | .000 |
| 2040 | 238 | | | | | | | 155 | .023 | .000 | .000 |
| 2100 | 242 | | | | | | | 171 | .000 | .000 | .000 |
| 2120 | | | | | | | | | .000 | .000 | .000 |
| 2140 | 237 | | | | | | | 171 | .000 | .000 | .000 |
| 2200 | 237 | | | | | | | 174 | .000 | .000 | .000 |
| 2220 | 308 | | | | | | | 163 | .013 | .000 | .000 |
| 2240 | 270 | | | | | 290-246 | | 151 | .026 | .000 | .000 |
| 2300 | 269 | | | | | | | 197 | .065 | .196 | .000 |
| 2320 | 239 | | | | | | | 132 | .000 | .000 | .000 |
| 2340 | 244 | | | | | | | 142 | .000 | .000 | .000 |

TABLE A.63 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0000 | 260 | | | | | | | 142 | 000 | .000 | .000 |
| 0020 | 272 | | | | | | | 133 | 000 | .000 | .000 |
| 0040 | 276 | | | | | | | 127 | 000 | .000 | .000 |
| 0100 | 279 | | | | | | | 103 | 000 | .000 | .000 |
| 0120 | 280 | | | | | | | 124 | 000 | .000 | .000 |
| 0140 | 300 | | | | | | | 124 | 000 | .000 | .000 |
| 0200 | 245 | | | | | | | 125 | 000 | .040 | .000 |
| 0220 | 227 | | | | | | | 126 | 000 | .000 | .000 |
| 0240 | 207 | | | | | | | 152 | 000 | .000 | .000 |
| 0300 | 179 | | | | | | | 106 | 000 | .000 | .000 |
| 0320 | 179 | | | | | | | 102 | 000 | .000 | .000 |
| 0340 | 153 | | | | | | | 061 | 065 | .000 | .000 |
| 0400 | 174 | | | | | | | 058 | 000 | .000 | .000 |
| 0420 | | | | | | | | | | .000 | .000 |
| 0440 | | | | | | | | | | .000 | .000 |
| 0500 | | | | | | | | | | .000 | .000 |
| 0520 | | | | | | | | | | .000 | .000 |
| 0540 | | | | | | | | | | .000 | .000 |
| 0600 | | | | | | | | | | .000 | .000 |
| 0620 | | | | | | | | | | .000 | .000 |
| 0640 | | | | | | | | | | .000 | .000 |
| 0700 | 090 | | | | | | | | | .041 | .000 |
| 0720 | 075 | | | | | | | 040 | 000 | .381 | .000 |
| 0740 | 069 | | | | | | | 043 | 000 | .167 | .000 |
| 0800 | 074 | | | | | | | 040 | 000 | .037 | .000 |
| 0820 | | | | | | | | | | .000 | .000 |
| 0840 | 078 | | | | | | | | | .011 | .000 |
| 0900 | 077 | | | | | | | 055 | 000 | .011 | .000 |
| 0920 | 105 | | | | | | | 040 | 000 | .000 | .000 |
| 0940 | 040 | | | | | | | 040 | B | .000 | .000 |
| 1000 | | | | | | | | | | .028 | .000 |
| 1020 | 108 | | | | | | | 040 | 000 | .000 | .000 |
| 1040 | 135 | | | | | | | 040 | 021 | .056 | .000 |
| 1100 | 129 | | | | | | | 040 | .112 | .000 | .000 |
| 1120 | 116 | | | | | | | 040 | 000 | .000 | .000 |
| 1140 | 088 | | | | | | | 040 | .042 | .000 | .000 |

TABLE A.64 CANTON TO MIDWAY, KING FISH

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|---------|--|-----|-----------|--------------|-----------------|
| 1200 | 040 | | | | | | | 040 | B | .229 | .000 |
| 1220 | 199 | | | | | | | 066 | .165 | .324 | .000 |
| 1240 | 090 | | | | | | | 040 | .460 | .328 | .000 |
| 1300 | 040 | | | | | | | 040 | B | .071 | .000 |
| 1320 | 088 | | | | | | | 055 | .727 | .286 | .591 |
| 1340 | | | | | | | | | | .444 | .617 |
| 1420 | 088 | | | | | | | 083 | 000 | .544 | .674 |
| 1440 | 090 | | | | | | | 056 | .529 | .348 | .357 |
| 1500 | 103 | | | | | | | 054 | .204 | .332 | .302 |
| 1520 | 099 | | | | | | | 053 | .500 | .531 | .400 |
| 1540 | 115 | | | | | | | 051 | .234 | .220 | .172 |
| 1600 | 111 | | | | | | | 048 | .365 | .398 | .000 |
| 1620 | 109 | | | | | | | 046 | .159 | .417 | .235 |
| 1640 | 113 | | | | | | | 040 | .493 | .480 | .275 |
| 1700 | 087 | | | | | | | 057 | .333 | .299 | .044 |
| 1720 | 116 | | | | | | | 055 | .311 | .353 | .333 |
| 1800 | | | | | | | | | | .056 | .075 |
| 1820 | 259 | | | | | | | 081 | .253 | .182 | .075 |
| 1840 | 281 | | | | | 222-177 | | 117 | .000 | .153 | .100 |
| 1900 | 235 | | | | | | | 096 | .000 | .095 | .108 |
| 1920 | 223 | | | | | | | 081 | .028 | .106 | .090 |
| 1940 | 293 | | | | | | | 082 | .171 | .052 | .138 |
| 2000 | 306 | | | | | | | 058 | .081 | .096 | .043 |
| 2020 | 256 | | | | | | | 078 | .435 | .054 | .066 |
| 2040 | 270 | | | | | | | 019 | .019 | .000 | .000 |
| 2100 | 282 | | | | | | | 060 | .113 | .039 | .101 |
| 2120 | 279 | | | | | | | 058 | .235 | .080 | .079 |
| 2140 | 293 | | | | | | | 063 | .083 | .006 | .000 |
| 2200 | 292 | | | | | | | 065 | .039 | .064 | .101 |
| 2220 | 289 | | | | | | | 069 | .073 | .094 | .094 |
| 2240 | 312 | | | | | | | 063 | .056 | .224 | .238 |
| 2300 | 317 | | | | | 155-143 | | 111 | .131 | .215 | .198 |
| 2320 | 262 | | | | | | | 112 | .067 | .120 | .059 |
| 2340 | 260 | | | | | | | 125 | .185 | .083 | .067 |

1210 GMT 1 NOV.

D-3670-441

TABLE A.64 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|---------|--|--|--|---------|-----|-----------|--------------|-----------------|
| 0000 | | | | | | | | | 116 | .128 | .050 | .023 |
| 0020 | 303 | 230-215 | 187-178 | | | | | | 098 | .191 | .079 | .084 |
| 0040 | 344 | 249-206 | 190-181 | | | | | | 112 | .093 | .057 | .169 |
| 0100 | 348 | 314-306 | 235-216 | 156-151 | | | | | 115 | .199 | .023 | .118 |
| 0120 | 306 | 258-247 | 189-179 | 189-181 | | | | | 127 | .057 | .000 | .067 |
| 0140 | 303 | | 193-176 | | | | | | 117 | .160 | .007 | .000 |
| 0200 | 304 | 233-220 | | | | | | | 107 | .000 | .000 | .000 |
| 0220 | 239 | | | | | | | | 117 | .000 | .000 | .000 |
| 0240 | 244 | | | | | | | | 110 | .000 | .000 | .000 |
| 0300 | 264 | | 189-175 | | | | | | 104 | .056 | .000 | .000 |
| 0320 | 283 | | 189-180 | | | | | | 092 | .000 | .000 | .000 |
| 0340 | 243 | | | | | | | | 084 | .000 | .000 | .000 |
| 0400 | 265 | | 189-179 | | | | | | 078 | .063 | .000 | .000 |
| 0420 | 403 | | | | | | | | 078 | .000 | .000 | .000 |
| 0440 | 317 | | | | | | | | 062 | .000 | .000 | .000 |
| 0500 | 345 | | | | | | | | 057 | .000 | .000 | .000 |
| 0520 | | | | | | | | | 052 | .000 | .000 | .000 |
| 0540 | 257 | | | | | | | | 041 | .156 | .046 | .091 |
| 0600 | 214 | | 158-148 | 101-090 | | | | 050-044 | 040 | .027 | .031 | .063 |
| 0620 | 227 | | | | | | | 049-043 | 040 | .051 | .007 | .014 |
| 0640 | 176 | | | | | | | 049-043 | 041 | .065 | .076 | .152 |
| 0700 | 134 | | | | | | | 050-043 | 041 | .098 | .009 | .019 |
| 0720 | 153 | | | | | | | 049-044 | 040 | .153 | .030 | .061 |
| 0740 | 275 | | | | | | | 050-044 | 041 | .344 | .032 | .041 |
| 0800 | 250 | 248-238 | 164-153 | 140-136 | | | | 063-057 | 049 | .550 | .105 | .195 |
| 0820 | 129 | 219-198 | 163-153 | | | | | | 055 | .756 | .105 | .109 |
| 0840 | 190 | | 168-130 | | | | | | 055 | .287 | .106 | .319 |
| 0900 | 229 | | 199-178 | | | | | | 051 | .087 | .106 | .061 |
| 0920 | 190 | | 140-135 | | | | | | 054 | .257 | .061 | .184 |
| 0940 | 040 | | | | | | | 062-060 | 040 | B | .024 | .000 |
| 1000 | 233 | | | | | | | 062-058 | 050 | .230 | .121 | .205 |
| 1020 | 228 | | | | | | | 062-077 | 051 | .203 | .095 | .122 |
| 1040 | 235 | | | | | | | 062-060 | 049 | .184 | .188 | .295 |
| 1100 | 243 | | | | | | | 073-070 | 050 | .181 | .092 | .000 |
| 1120 | 276 | | 125-116 | | | | | | 050 | .084 | .436 | .000 |
| 1140 | 223 | | 121-110 | 073-070 | | | | 062-057 | 050 | .133 | .200 | .263 |

TABLE A.65 KAUAI TO WAKE, KING FISH

1210 GMT 1 NOV.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|---------|---------|-----|-----------|--------------|-----------------|
| 1200 | 099 | | | | | | | 067 | .063 | .099 | .000 |
| 1220 | 040 | | | | | | | 040 | B | .049 | .043 |
| 1240 | | | | | | | | | | | .000 |
| 1300 | | | | | | | | | | | .125 |
| 1320 | | | | | | | | | | | .000 |
| 1340 | | | | | | | | | | | .000 |
| 1400 | | | | | | | | | | | .000 |
| 1420 | | | | | | | | | | | .000 |
| 1440 | | | | | | | | | | | .000 |
| 1500 | | | | | | | | | | | .000 |
| 1520 | | | | | | | | | | | .000 |
| 1540 | | | | | | | | | | | .000 |
| 1600 | | | | | | | | | | | .000 |
| 1620 | | | | | | | | | | | .000 |
| 1640 | | | | | | | | | | | .067 |
| 1700 | | | | | | | | | | | .000 |
| 1720 | | | | | | | | | | | .000 |
| 1740 | | | | | | | | | | | .000 |
| 1800 | | | | | | | | | | | .000 |
| 1820 | | | | | | | | | | | .000 |
| 1840 | | | | | | | | | | | .077 |
| 1900 | | | | | | | | | | | .061 |
| 1920 | | | | | | | | | | | .023 |
| 1940 | | | | | | | | | | | .266 |
| 2000 | | | | | | | | | | | .009 |
| 2020 | | | | | | | | | | | .155 |
| 2040 | 040 | | | | | | | 040 | B | .008 | .007 |
| 2100 | 296 | | | | | 222-199 | | 182 | .202 | .003 | .007 |
| 2120 | 230 | | | | | | | 165 | .000 | .000 | .000 |
| 2140 | 294 | | | | | | | 162 | .000 | .163 | .326 |
| 2200 | 304 | | | | | | | 166 | .000 | .233 | .211 |
| 2220 | 326 | | | | | 306-275 | | 173 | .203 | .124 | .285 |
| 2240 | 164 | | | | | | | 046 | .059 | .103 | .356 |
| 2300 | 318 | | | | | 220-200 | 057-050 | 167 | .132 | .135 | .000 |
| 2320 | 318 | | | | | | | 214 | .000 | .128 | .000 |
| 2340 | 317 | | | | | | | 229 | .000 | .127 | .000 |

TABLE A.65 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0000 | 322 | | | | | | | 227 | 000 | .069 | .096 |
| 0020 | 040 | | | | | | | 040 | B | .065 | .000 |
| 0040 | 303 | | | | | | | 251 | 000 | .034 | .000 |
| 0100 | 328 | | | | | | | 124 | .230 | .000 | .000 |
| 0120 | 323 | | | | | | | 108 | 000 | .000 | .000 |
| 0140 | 321 | | | | | | | 111 | 000 | .000 | .011 |
| 0200 | 296 | | | | | | | 110 | 000 | .007 | .126 |
| 0220 | 317 | | | | | | | 097 | 000 | .007 | .000 |
| 0240 | 327 | | | | | | | 071 | 000 | .012 | .000 |
| 0300 | 385 | | | | | | | 068 | 000 | .000 | .000 |
| 0320 | 318 | | | | | | | 065 | 000 | .000 | .000 |
| 0340 | 320 | | | | | | | 060 | 000 | .020 | .000 |
| 0400 | 320 | | | | | | | 059 | 000 | .119 | .007 |
| 0420 | 320 | | | | | | | 052 | 000 | .000 | .000 |
| 0440 | 320 | | | | | | | 058 | 000 | .009 | .008 |
| 0500 | 317 | | | | | | | 057 | 000 | .035 | .000 |
| 0520 | 318 | | | | | | | 047 | .026 | .037 | .010 |
| 0540 | 275 | | | | | | | 040 | 000 | .050 | .009 |
| 0600 | 261 | | | | | | | 040 | 000 | .033 | .000 |
| 0620 | 232 | | | | | | | 040 | 000 | .015 | .000 |
| 0640 | 238 | | | | | | | 040 | 000 | .091 | .279 |
| 0700 | 239 | | | | | | | 040 | 000 | .052 | .000 |
| 0720 | 202 | | | | | | | 040 | 000 | .045 | .186 |
| 0740 | 196 | | | | | | | 040 | 000 | .017 | .073 |
| 0800 | 204 | | | | | | | 040 | 000 | .005 | .000 |
| 0820 | 240 | | | | | | | 040 | 000 | .012 | .000 |
| 0840 | 241 | | | | | | | 040 | 000 | .025 | .000 |
| 0900 | 236 | | | | | | | 040 | 000 | .046 | .127 |
| 0920 | 256 | | | | | | | 040 | 000 | .061 | .167 |
| 0940 | 487 | | | | | | | 040 | .106 | .037 | .000 |
| 1000 | 522 | | | | | | | 049 | .546 | .023 | .000 |
| 1020 | 539 | | | | | | | 040 | .577 | .032 | .000 |
| 1040 | 640 | | | | | | | 051 | .261 | .032 | .000 |
| 1100 | | | | | | | | | .200 | .022 | .000 |
| 1120 | 562 | | | | | | | 040 | .397 | .047 | .000 |
| 1140 | | | | | | | | | | | .000 |

TABLE A.66 KAUAI TO MIDWAY, KING FISH

1210 OCT 1 NOV.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | DKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 1200 | 058 | | | | | | | 041 | .176 | .013 | .000 |
| 1220 | 135 | | | | | | | 052 | .120 | .043 | .000 |
| 1240 | 116 | | | | | | | 040 | .171 | .042 | .000 |
| 1300 | 113 | | | | | | | 100 | .162 | .199 | .000 |
| 1320 | 067 | | | | | | | 051 | .313 | .148 | .085 |
| 1340 | 089 | | | | | | | 040 | .129 | .045 | .085 |
| 1400 | 160 | | | | | | | 040 | .325 | .081 | .128 |
| 1420 | | | | | | | | | | .238 | .238 |
| 1440 | 158 | | | | | | | 040 | .059 | .114 | .074 |
| 1500 | | | | | | | | | | .074 | .074 |
| 1520 | | | | | | | | | | .000 | .000 |
| 1540 | 147 | | | | | | | 052 | .126 | .107 | .000 |
| 1600 | 139 | | | | | | | 048 | .093 | .067 | .056 |
| 1620 | | | | | | | | | | .000 | .000 |
| 1640 | 136 | | | | | | | 040 | .135 | .044 | .000 |
| 1700 | 121 | | | | | | | 040 | .136 | .106 | .091 |
| 1720 | 128 | | | | | | | 058 | .000 | .310 | .435 |
| 1740 | 154 | | | | | | | 083 | .000 | .041 | .000 |
| 1800 | | | | | | | | | | .000 | .000 |
| 1820 | 212 | | | | | | | 094 | .136 | .060 | .040 |
| 1840 | 208 | | | | | | | 110 | .296 | .116 | .142 |
| 1900 | 225 | | | | | | | 120 | .276 | .101 | .034 |
| 1920 | 241 | | | | | | | 121 | .267 | .103 | .027 |
| 1940 | 223 | | | | | | | 122 | .228 | .036 | .031 |
| 2000 | 162 | | | | | | | 079 | .000 | .180 | .000 |
| 2020 | 174 | | | | | | | 053 | .000 | .115 | .094 |
| 2040 | 160 | | | | | | | 059 | .066 | .000 | .000 |
| 2100 | 112 | | | | | | | 057 | .164 | .037 | .000 |
| 2120 | 151 | | | | | | | 081 | .000 | .188 | .098 |
| 2140 | | | | | | | | 050 | .000 | .010 | .010 |
| 2200 | 100 | | | | | | | 077 | .000 | .043 | .000 |
| 2220 | 105 | | | | | | | | | .000 | .000 |
| 2240 | | | | | | | | | | .000 | .000 |
| 2300 | 309 | | | | | | | 077 | .527 | .056 | .071 |
| 2320 | 297 | | | | | | | 070 | .573 | .054 | .037 |
| 2340 | 308 | | | | | | | 073 | .574 | .000 | .000 |

TABLE A.66 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0000 | 178 | | | | | | | | 108 | .000 | .057 | .000 |
| 0020 | 271 | | | | | | | | 114 | .471 | .028 | .26 |
| 0040 | 288 | | | | | | | | 106 | .538 | .065 | .09 |
| 0100 | 147 | | | | | | | | 095 | .192 | .085 | .071 |
| 0120 | 200 | | | | | | | | 095 | .267 | .024 | .070 |
| 0140 | 146 | | | | | | | | 141 | .000 | .009 | .000 |
| 0200 | 158 | | | | | | | | 109 | .000 | .028 | .056 |
| 0220 | 259 | | | | | | | | 123 | .279 | .016 | .000 |
| 0240 | 256 | | | | | | | | 142 | .623 | .013 | .017 |
| 0300 | 258 | | | | | | | | 117 | .000 | .007 | .000 |
| 0320 | | | | | | | | | | | | |
| 0340 | 199 | | | | | | | | 079 | .142 | .000 | .000 |
| 0400 | 171 | | | | | | | | 067 | .106 | .000 | .000 |
| 0420 | 180 | | | | | | | | 063 | .111 | .000 | .013 |
| 0440 | 194 | | | | | | | | 051 | .000 | .000 | .000 |
| 0500 | 231 | | | | | | | | 047 | .098 | .000 | .000 |
| 0520 | | | | | | | | | | .201 | .000 | .000 |
| 0540 | 236 | | | | | | | | | | | |
| 0600 | 296 | | | | | | | | 040 | .020 | .081 | .081 |
| 0620 | 240 | | | | | | | | 040 | .059 | .014 | .014 |
| 0640 | 211 | | | | | | | | 040 | .045 | .023 | .023 |
| 0700 | 175 | | | | | | | | 040 | .099 | .149 | .219 |
| 0720 | 199 | | | | | | | | 040 | .037 | .057 | .089 |
| 0740 | 175 | | | | | | | | 040 | .089 | .136 | .000 |
| 0800 | 155 | | | | | | | | 040 | .081 | .081 | .187 |
| 0820 | 159 | | | | | | | | 040 | .035 | .077 | .336 |
| 0840 | 159 | | | | | | | | 040 | .188 | .055 | .134 |
| 0900 | 157 | | | | | | | | 040 | .084 | .045 | .198 |
| 0920 | 156 | | | | | | | | 041 | .190 | .055 | .168 |
| 0940 | 159 | | | | | | | | 041 | .235 | .074 | .211 |
| 1000 | 160 | | | | | | | | 041 | .119 | .066 | .067 |
| 1020 | 154 | | | | | | | | 041 | .235 | .029 | .078 |
| 1040 | 180 | | | | | | | | 040 | .193 | .035 | .000 |
| 1100 | 172 | | | | | | | | 040 | .100 | .050 | .000 |
| 1120 | 148 | | | | | | | | 041 | .031 | .023 | .000 |
| 1140 | 154 | | | | | | | | 040 | .074 | .032 | .000 |
| | | | | | | | | | 040 | .044 | .120 | .000 |

TABLE A.67 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--------------------|--|-----|-----------|--------------|-----------------|
| 0000 | 306 | | | | | | | 056 | .016 | .000 | .000 |
| 0020 | 307 | | | | | | | 047 | .000 | .000 | .000 |
| 0100 | 337 | | | | | | | 053 | .000 | .003 | .000 |
| 0120 | 336 | | | | | | | 041 | .000 | .012 | .000 |
| 0140 | 337 | | | | | | | 053 | .014 | .014 | .000 |
| 0200 | 356 | | | | | | | 041 | .000 | .000 | .000 |
| 0220 | 352 | | | | | | | 041 | .000 | .000 | .000 |
| 0240 | 376 | | | | | | | 044 | .000 | .002 | .000 |
| 0300 | 383 | | | | | | | 041 | .000 | .006 | .000 |
| 0320 | 381 | | | | | | | 041 | .000 | .014 | .000 |
| 0340 | 397 | | | | | | | 042 | .000 | .030 | .000 |
| 0400 | 412 | | | | | | | 041 | .000 | .022 | .000 |
| 0420 | 436 | | | | | | | 041 | .000 | .008 | .000 |
| 0440 | 452 | | | | | | | 041 | .000 | .000 | .000 |
| 0500 | 458 | | | | | | | 041 | .000 | .012 | .000 |
| 0520 | 442 | | | | | | | 041 | .000 | .000 | .000 |
| 0540 | | | | | | | | 041 | .000 | .000 | .000 |
| 0600 | 339 | | | | | | | 040 | .000 | .000 | .000 |
| 0620 | 355 | | | | | | | 040 | .000 | .000 | .000 |
| 0640 | 356 | | | | | | | 040 | .000 | .000 | .000 |
| 0700 | 301 | | | | | | | 040 | .000 | .000 | .000 |
| 0720 | 304 | | | | | | | 040 | .080 | .010 | .000 |
| 0740 | 287 | | | | | | | 040 | .053 | .000 | .000 |
| 0800 | 348 | | | | | 149-142 | | 040 | .000 | .038 | .000 |
| 0820 | 337 | | | | | 169-155 166-153 | | 040 | .000 | .052 | .021 |
| 0840 | 323 | | | | | | | 040 | .060 | .068 | .073 |
| 0900 | 336 | | | | | | | 040 | .000 | .078 | .131 |
| 0920 | | | | | | | | 040 | | | .000 |
| 0940 | 040 | | | | | | | 040 | B | .05 | .000 |
| 1000 | 346 | | | | | | | 040 | .000 | .060 | .048 |
| 1020 | 368 | | | | | | | 040 | .000 | .097 | .121 |
| 1040 | 345 | | | | | | | 040 | .000 | .153 | .126 |
| 1100 | 385 | | | | | | | 040 | .000 | .191 | .122 |
| 1120 | 414 | | | | | | | 040 | .000 | .198 | .213 |
| 1140 | 383 | | | | | | | 040 | .000 | .169 | .233 |

TABLE A.68 CANTON TO WAKE, KING FISH

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|---------|--|---------|--|-----|-----------|--------------|-----------------|
| | | | | | | | | | | | |
| 1200 | 251 | | | | | | | 081 | 000 | .167 | .000 |
| 1220 | 254 | | | | | | | 078 | 000 | .114 | .000 |
| 1240 | 196 | | | | | | | 082 | .272 | .096 | .017 |
| 1300 | | 162-155 | 119-114 | 108-089 | | | | | | | .040 |
| 1320 | 125 | | | 116-093 | | | | 047 | .397 | .034 | .047 |
| 1340 | | | | | | | | | | | .039 |
| 1400 | 087 | | | | | | | 082 | 000 | .016 | .035 |
| 1420 | 087 | | | | | | | 081 | 000 | .070 | .027 |
| 1440 | 095 | | | | | | | 081 | 000 | .069 | .000 |
| 1500 | 040 | | | | | | | 040 | B | .037 | .000 |
| 1520 | | | | | | | | | | | .000 |
| 1540 | 105 | | | | | | | 081 | 000 | .009 | .000 |
| 1600 | 153 | | | 129-104 | | 073-069 | | 064 | .326 | .081 | .071 |
| 1620 | 160 | | | 124-107 | | 090-079 | | 065 | .326 | .108 | .000 |
| 1640 | 040 | | | | | | | 040 | B | .048 | .058 |
| 1700 | | | | | | | | | | | .079 |
| 1720 | 109 | | | | | | | 081 | .143 | .067 | .000 |
| 1740 | 040 | | | | | | | 040 | B | .100 | .000 |
| 1800 | 194 | | | | | | | 115 | .430 | .000 | .000 |
| 1820 | 231 | | | | | | | 101 | .131 | .120 | .000 |
| 1840 | 265 | | | | | | | 111 | 000 | .148 | .224 |
| 1900 | 294 | | | | | | | 107 | 000 | .000 | .000 |
| 1920 | 286 | | | | | | | 084 | 000 | .000 | .000 |
| 1940 | 291 | | | | | | | 100 | 000 | .000 | .000 |
| 2000 | 307 | | | | | | | 083 | 000 | .000 | .000 |
| 2020 | 297 | | | | | | | 124 | 000 | .000 | .000 |
| 2040 | 294 | | | | | | | 113 | 000 | .009 | .000 |
| 2100 | 288 | | | | | | | 124 | .030 | .009 | .000 |
| 2120 | 280 | | | | | | | 114 | 000 | .000 | .000 |
| 2140 | 270 | | 157-152 | | | | | 114 | 000 | .000 | .000 |
| 2200 | 256 | | | | | | | 117 | 000 | .000 | .000 |
| 2220 | 254 | | | | | | | 115 | 000 | .052 | .104 |
| 2240 | 247 | | | | | | | 113 | 000 | .000 | .000 |
| 2300 | 246 | | | | | | | 125 | 000 | .000 | .000 |
| 2320 | 247 | | | | | | | 127 | 000 | .004 | .000 |
| 2340 | 260 | | | | | | | 121 | 000 | .000 | .000 |

1210 CRT 1 NOV.

TABLE A.68 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0000 | 273 | | | | | | | 116 | 000 | .018 | .000 |
| 0020 | 275 | | | | | | | 112 | 000 | .000 | .000 |
| 0040 | 285 | | | | | | | 103 | 000 | .000 | .000 |
| 0100 | 293 | | | | | | | 074 | 000 | .000 | .000 |
| 0120 | 278 | | | | | | | 077 | 000 | .000 | .000 |
| 0140 | 282 | | | | | | | 074 | 000 | .000 | .000 |
| 0200 | 271 | | | | | | | 067 | 000 | .004 | .000 |
| 0220 | 283 | | | | | | | 076 | 000 | .000 | .000 |
| 0240 | 292 | | | | | | | 075 | 000 | .017 | .000 |
| 0300 | 306 | | | | | | | 069 | 000 | .000 | .000 |
| 0320 | 310 | | | | | | | 066 | 000 | .000 | .000 |
| 0340 | 332 | | | | | | | 062 | 000 | .003 | .000 |
| 0400 | 345 | | | | | | | 062 | 000 | .007 | .000 |
| 0420 | 368 | | | | | | | 053 | 000 | .034 | .000 |
| 0440 | 376 | | | | | | | 049 | 000 | .057 | .000 |
| 0500 | 385 | | | | | | | 045 | 000 | .103 | .081 |
| 0520 | 361 | 317-304 | | | | | | 040 | .050 | .150 | .000 |
| 0540 | 369 | 341-303 | | | | | | 040 | .116 | .006 | .000 |
| 0600 | 364 | 317-275 | | | | | | 040 | .216 | .015 | .000 |
| 0620 | 257 | | | | | | | 040 | 000 | .021 | .000 |
| 0640 | 237 | | | | | | | 040 | 000 | .129 | .000 |
| 0700 | 305 | 246-228 | | | | | | 040 | .068 | .087 | .000 |
| 0720 | 295 | 254-229 | | | | | | 045 | .100 | .036 | .000 |
| 0740 | | | | | | | | | | | .000 |
| 0800 | 167 | | | | | | | 046 | .364 | .057 | .010 |
| 0820 | 160 | | | | | | | 046 | .158 | .027 | .000 |
| 0840 | 143 | | | | | | | 063 | .450 | .025 | .000 |
| 0900 | 144 | | | | | | | 063 | .173 | .011 | .012 |
| 0920 | 284 | | | | | | | 050 | .269 | .017 | .000 |
| 0940 | | | | | | | | | | | .000 |
| 1000 | 230 | | | | | | | 057 | .295 | .046 | .049 |
| 1020 | 256 | | | | | | | 062 | .345 | .079 | .148 |
| 1040 | 257 | | | | | | | 123 | .246 | .090 | .038 |
| 1100 | 242 | | | | | | | 184 | 000 | .024 | .183 |
| 1120 | 290 | | | | | | | 080 | .290 | .000 | .000 |
| 1140 | 294 | | | | | | | 123 | 000 | .130 | .034 |

TABLE A.69 CANTON TO VITI LEVU, KING FISH

1210 GMT 1. 3077.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 1200 | 260 | | | | | | | | 041 | 000 | .000 | .000 |
| 1220 | 333 | | | | | | | | 040 | 000 | .000 | .000 |
| 1240 | 274 | | | | | | | | 040 | 000 | .013 | .000 |
| 1300 | 459 | | | | | | | | 040 | 000 | .028 | .056 |
| 1320 | 523 | | | | | | | | 040 | 000 | .050 | .087 |
| 1340 | 363 | | | | | | | | 040 | 000 | .036 | .144 |
| 1400 | 319 | | | | | | | | 040 | 000 | .026 | .106 |
| 1420 | 333 | | | | | | | | 041 | 000 | .028 | .033 |
| 1440 | 319 | | | | | | | | 040 | 000 | .009 | .014 |
| 1500 | 320 | | | | | | | | 040 | 000 | .034 | .136 |
| 1520 | 302 | | | | | | | | 040 | 000 | .076 | .188 |
| 1540 | 255 | | | | | | | | 040 | 000 | .000 | .000 |
| 1600 | 206 | | | | | | | | 040 | 000 | .127 | .237 |
| 1620 | 191 | | | | | | | | 040 | 000 | .045 | .126 |
| 1640 | 173 | | | | | | | | 040 | 000 | .007 | .022 |
| 1700 | 154 | | | | | | | | 040 | 000 | .085 | .187 |
| 1720 | 167 | | | | | | | | 040 | 000 | .041 | .129 |
| 1740 | 169 | | | | | | | | 040 | 000 | .053 | .101 |
| 1800 | 195 | | | | | | | | 040 | 000 | .000 | .046 |
| 1820 | | | | | | | | | | | | |
| 1840 | 224 | | | | | | | | 040 | 000 | .028 | .050 |
| 1900 | 233 | | | | | | | | 040 | 000 | .007 | .027 |
| 1920 | 223 | | | | | | | | 040 | 000 | .025 | .056 |
| 1940 | 221 | | | | | | | | 040 | 000 | .004 | .017 |
| 2000 | 213 | | | | | | | | 040 | 000 | .018 | .072 |
| 2020 | 208 | | | | | | | | 040 | 000 | .000 | .000 |
| 2040 | | | | | | | | | | | | |
| 2100 | 228 | | | | | | | | 040 | 000 | .000 | .000 |
| 2120 | | | | | | | | | | | | |
| 2140 | 255 | | | | | | | | 040 | 000 | .000 | .000 |
| 2200 | 255 | | | | | | | | 040 | 000 | .000 | .000 |
| 2220 | 262 | | | | | | | | 054 | .014 | .000 | .000 |
| 2240 | 286 | | | | | | | | 049 | 000 | .000 | .000 |
| 2300 | 317 | | | | | | | | 049 | 000 | .000 | .000 |
| 2320 | 304 | | | | | | | | 056 | 000 | .000 | .000 |
| 2340 | 305 | | | | | | | | 040 | 000 | .000 | .000 |
| | | | | | | | | | 041 | 000 | .000 | .000 |

065-062

TABLE A.69 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----|-----------|--------------|-----------------|
| 0000 | 333 | | | | | | | 046 | 000 | .000 | .000 | |
| 0020 | 311 | | | | | | | 040 | 000 | .000 | .000 | |
| 0040 | 335 | | | | | | | 040 | 000 | .000 | .000 | |
| 0100 | 317 | | | | | | | 040 | 000 | .000 | .000 | |
| 0120 | 306 | | | | | | | 040 | 000 | .000 | .000 | |
| 0140 | 317 | | | | | | | 045 | 000 | .000 | .000 | |
| 0200 | 298 | | | | | | | 040 | 000 | .000 | .000 | |
| 0220 | | | | | | | | | | | | |
| 0240 | 307 | | | | | | | 040 | 000 | .000 | .000 | |
| 0300 | 311 | | | | | | | 040 | 000 | .000 | .000 | |
| 0320 | 316 | | | | | | | 040 | 000 | .000 | .000 | |
| 0340 | 334 | | | | | | | 040 | 000 | .000 | .000 | |
| 0400 | 323 | | | | | | | 040 | 000 | .000 | .000 | |
| 0420 | | | | | | | | | | | | |
| 0440 | 370 | | | | | | | 040 | 000 | .000 | .000 | |
| 0500 | 353 | | | | | | | 040 | 000 | .000 | .000 | |
| 0520 | 317 | | | | | | | 040 | 000 | .000 | .000 | |
| 0540 | 277 | | | | | | | 040 | 000 | .000 | .000 | |
| 0600 | 237 | | | | | | | 040 | 000 | .000 | .000 | |
| 0620 | 291 | | | | | | | 040 | 000 | .000 | .000 | |
| 0640 | 315 | | | | | | | 040 | 000 | .000 | .000 | |
| 0700 | 277 | | | | | | | 040 | 000 | .000 | .000 | |
| 0720 | 278 | | | | | | | 040 | 000 | .072 | .215 | |
| 0740 | 240 | | | | | | | 040 | 000 | .007 | .019 | |
| 0800 | 227 | | | | | | | 040 | 000 | .011 | .033 | |
| 0820 | 247 | | | | | | | 040 | 000 | .012 | .041 | |
| 0840 | | | | | | | | 040 | 000 | .027 | .067 | |
| 0900 | 269 | | | | | | | 040 | 000 | .022 | .000 | |
| 0920 | 262 | | | | | | | 040 | 000 | .039 | .051 | |
| 0940 | | | | | | | | | | | | |
| 1000 | 260 | | | | | | | 040 | 000 | .135 | .036 | |
| 1020 | 199 | | | | | | | 040 | 000 | .000 | .000 | |
| 1040 | 255 | | | | | | | 040 | 000 | .000 | .273 | |
| 1100 | 249 | | | | | | | 040 | 000 | .000 | .000 | |
| 1120 | 220 | | | | | | | 040 | 000 | .000 | .000 | |
| 1140 | 227 | | | | | | | 040 | 000 | .000 | .000 | |

TABLE A.70 CANTON TO TUTUILA, KING FISH

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | 1210 GMT 1 NOV. | |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|-----------------|-----------------|
| | | | | | | | | | | BKGD AVERAGE | SINGLE BKGD DAY |
| 1200 | 596 | | | | | | | 039 | 000 | .000 | .000 |
| 1220 | 407 | | | | | | | 040 | 000 | .059 | .104 |
| 1240 | 315 | | | | | | | 040 | .080 | .024 | .121 |
| 1300 | 366 | | | | | | | 040 | .064 | .074 | .000 |
| 1320 | 342 | | | | | | | 040 | 000 | .027 | .080 |
| 1340 | 293 | | | | | | | 040 | 000 | .021 | .000 |
| 1400 | 288 | | | | | | | | | | .179 |
| 1440 | 316 | | | | | | | 041 | 000 | .054 | .054 |
| 1500 | 301 | | | | | | | 040 | 000 | .079 | .000 |
| 1520 | 320 | | | | | | | 040 | 000 | .049 | .000 |
| 1540 | 223 | | | | | | | 040 | .207 | .013 | .000 |
| 1600 | 225 | | | | | | | 040 | 000 | .114 | .343 |
| 1620 | 216 | | | | | | | 040 | .016 | .163 | .385 |
| 1640 | 228 | | | | | | | 040 | 000 | .010 | .029 |
| 1700 | 228 | | | | | | | 040 | 000 | .000 | .000 |
| 1720 | 214 | | | | | | | 040 | 000 | .000 | .000 |
| 1740 | 234 | | | | | | | 040 | .052 | .018 | .036 |
| 1800 | 231 | | | | | | | 040 | 000 | .131 | .000 |
| 1820 | 224 | | | | | | | 040 | 000 | .055 | .000 |
| 1840 | 226 | | | | | | | 040 | 000 | .000 | .000 |
| 1900 | 374 | | | | | | | 040 | 000 | .000 | .000 |
| 1920 | 283 | | | | | | | 041 | 000 | .012 | .000 |
| 1940 | 334 | | | | | | | 040 | 000 | .000 | .000 |
| 2000 | 305 | | | | | | | 041 | 000 | .045 | .000 |
| 2020 | 335 | | | | | | | 040 | 000 | .000 | .000 |
| 2040 | 470 | | | | | | | 041 | 000 | .041 | .000 |
| 2100 | 432 | | | | | | | 041 | 000 | .000 | .000 |
| 2120 | 521 | | | | | | | 041 | 000 | .046 | .000 |
| 2140 | 550 | | | | | | | 041 | 000 | .000 | .000 |
| 2200 | 562 | | | | | | | 041 | 000 | .000 | .000 |
| 2240 | 397 | | | | | | | 041 | 000 | .015 | .000 |
| 2300 | 225 | | | | | | | 042 | 000 | .000 | .000 |
| 2320 | 307 | | | | | | | 041 | 000 | .000 | .000 |
| 2340 | 206 | | | | | | | 040 | 000 | .000 | .000 |

TABLE A.71 CANTON TO RAROTONGA, KING FISH

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|-------------------------------|---------|------------------------------------------|-------------------------------|---------|---------|------|-----------|--------------|-----------------|
| | | 403-378 404-371 405-367 | 213-198 | 074-070 072-070 072-070 081-078 | 075-070 075-069 072-069 | 067-056 | 061-046 | | | | |
| 1200 | 224 | | | | | | 042 | 000 | .080 | .000 | |
| 1220 | 293 | | | | | | 041 | .060 | .170 | .000 | |
| 1240 | 194 | | | | | | 041 | 000 | .160 | .000 | |
| 1300 | 363 | | | | | | 040 | 000 | .266 | .185 | |
| 1320 | 163 | | | | | | 040 | .009 | .374 | .395 | |
| 1340 | 447 | | | | | | 043 | .067 | .179 | .195 | |
| 1400 | 448 | | | | | | 040 | .086 | .338 | .171 | |
| 1420 | 425 | | | | | | 040 | .114 | .224 | .329 | |
| 1440 | 361 | | | | | | 040 | 000 | .408 | .218 | |
| 1500 | 315 | | | | | | 040 | 000 | .321 | .325 | |
| 1520 | | | | | | | | | .000 | .000 | |
| 1540 | 243 | | | | | | 040 | 000 | .191 | .080 | |
| 1600 | 247 | | | | | | 040 | .029 | .230 | .286 | |
| 1620 | 271 | | | | | | 040 | .022 | .225 | .364 | |
| 1640 | 192 | | | | | | 044 | .020 | .170 | .208 | |
| 1700 | 230 | | | | | | 042 | 000 | .152 | .270 | |
| 1720 | | | | | | | | | .077 | .077 | |
| 1740 | 239 | | | | | | 040 | 000 | .045 | .089 | |
| 1800 | 235 | | | | | | 056 | 000 | .013 | .039 | |
| 1820 | 273 | | | | | | 042 | 000 | .000 | .000 | |
| 1840 | 311 | | | | | | 043 | .041 | .000 | .000 | |
| 1900 | 318 | | | | | | 046 | 000 | .000 | .000 | |
| 1920 | 359 | | | | | | 054 | 000 | .000 | .000 | |
| 1940 | 317 | | | | | | 042 | 000 | .000 | .000 | |
| 2000 | 312 | | | | | | 056 | 000 | .000 | .000 | |
| 2020 | 302 | | | | | | 057 | 000 | .000 | .000 | |
| 2040 | 307 | | | | | | 053 | 000 | .000 | .000 | |
| 2100 | 318 | | | | | | 052 | 000 | .000 | .000 | |
| 2120 | 318 | | | | | | 052 | .105 | .000 | .000 | |
| 2140 | 313 | | | | | | 042 | 000 | .000 | .000 | |
| 2200 | 325 | | | | | | 061 | .055 | .000 | .000 | |
| 2220 | 350 | | | | | | 061 | 000 | .000 | .000 | |
| 2240 | 347 | | | | | | 061 | 000 | .000 | .000 | |
| 2300 | 360 | | | | | | 063 | 000 | .000 | .000 | |
| 2320 | 367 | | | | | | 068 | 000 | .000 | .000 | |
| 2340 | 357 | | | | | | 065 | 000 | .000 | .000 | |

1210 CRT 1 NOV.

TABLE A.71 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|--|--|--|-----|-----------|--------------|-----------------|
| 0000 | 358 | | | | | | | 062 | 000 | .000 | .000 |
| 0020 | 359 | | | | | | | 061 | 000 | .000 | .000 |
| 0040 | 349 | | | | | | | 052 | 000 | .000 | .000 |
| 0100 | 366 | | | | | | | 053 | .006 | .000 | .000 |
| 0120 | 365 | | | | | | | 051 | .010 | .000 | .000 |
| 0140 | 367 | | | | | | | 041 | .000 | .089 | .000 |
| 0200 | 362 | 082-079 | | | | | | 041 | .016 | .000 | .000 |
| 0240 | 382 | | | | | | | 041 | .000 | .003 | .000 |
| 0300 | 397 | | | | | | | 042 | .000 | .108 | .000 |
| 0320 | 404 | | | | | | | 041 | .000 | .008 | .000 |
| 0340 | 416 | | | | | | | 041 | .000 | .003 | .000 |
| 0400 | 432 | | | | | | | 042 | .000 | .030 | .000 |
| 0420 | | | | | | | | | | | .026 |
| 0440 | 408 | | | | | | | 040 | .000 | .015 | .030 |
| 0500 | 368 | | | | | | | 040 | .000 | .020 | .040 |
| 0520 | 336 | | | | | | | 041 | .000 | .018 | .035 |
| 0540 | 270 | | | | | | | 040 | .000 | .000 | .000 |
| 0600 | | | | | | | | | | | .000 |
| 0620 | 231 | | | | | | | 040 | .000 | .014 | .000 |
| 0640 | 224 | | | | | | | 040 | .000 | .028 | .000 |
| 0700 | 220 | | | | | | | 040 | .000 | .068 | .122 |
| 0720 | 220 | | | | | | | 041 | .000 | .056 | .059 |
| 0740 | 266 | | | | | | | 043 | .000 | .200 | .037 |
| 0800 | 269 | | | | | | | 042 | .000 | .145 | .290 |
| 0820 | 277 | | | | | | | 040 | .000 | .117 | .117 |
| 0840 | 167 | | | | | | | 041 | .000 | .216 | .309 |
| 0900 | 272 | | | | | | | 043 | .000 | .154 | .292 |
| 0920 | 278 | | | 073-069 | | | | 040 | .017 | .057 | .114 |
| 0940 | | | | | | | | | | | .128 |
| 1000 | 267 | | | | | | | 040 | .000 | .125 | .148 |
| 1020 | 274 | | | | | | | 040 | .000 | .178 | .193 |
| 1040 | 280 | | | | | | | 040 | .000 | .247 | .000 |
| 1100 | 314 | | | | | | | 040 | .000 | .036 | .000 |
| 1120 | | | | | | | | | | | .000 |
| 1140 | | | | | | | | | | | .035 |

TABLE A.72 ROI-NAMUR TO TUTUILA, KING FISH

1210 GMT 1 NOV.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|--|--|---------|-----|-----------|--------------|-----------------|
| 1200 | | | | | | | | | | .000 | |
| 1220 | | | | | | | | | | .019 | |
| 1240 | 277 | | | | | | | 040 | .050 | .000 | |
| 1300 | 384 | | | | | | | 040 | .029 | .000 | |
| 1320 | 317 | | | | | | | 040 | .036 | .000 | |
| 1340 | 259 | | | | | | | 040 | .069 | .147 | |
| 1420 | 252 | | | | | | | 040 | .000 | .102 | |
| 1440 | 221 | | | | | | | 040 | .039 | .000 | |
| 1500 | 215 | | | 156-150 | | | | 040 | .000 | .000 | |
| 1520 | 212 | | | | | | | 040 | .199 | .133 | |
| 1540 | 183 | | | | | | | 040 | .044 | .088 | |
| 1600 | 172 | | | | | | | 040 | .048 | .037 | |
| 1620 | 157 | | | | | | 072-069 | 040 | .006 | .012 | |
| 1640 | | | | | | | | | | .000 | |
| 1700 | 140 | | | | | | | 040 | .000 | .000 | |
| 1720 | 148 | | | | | | | 040 | .064 | .000 | |
| 1740 | 171 | | | | | | | 040 | .025 | .000 | |
| 1800 | 191 | | | | | | | 040 | .038 | .000 | |
| 1820 | 221 | | | | | | | 041 | .022 | .000 | |
| 1840 | 242 | | | | | | | 041 | .187 | .000 | |
| 1900 | 263 | | | | | | | 041 | .083 | .000 | |
| 1920 | 267 | | | | | | | 041 | .000 | .000 | |
| 1940 | 268 | | | | | | | 041 | .000 | .000 | |
| 2000 | 273 | | | | | | | 041 | .000 | .000 | |
| 2020 | 267 | | | | | | | 041 | .000 | .000 | |
| 2040 | 257 | | | | | | | 041 | .000 | .000 | |
| 2100 | 237 | | | | | | | 056 | .000 | .000 | |
| 2120 | 229 | | | | | | | 070 | .000 | .000 | |
| 2140 | 232 | | | | | | | 063 | .000 | .000 | |
| 2200 | 235 | | | | | | | 061 | .014 | .000 | |
| 2220 | | | | | | | | 067 | .101 | .000 | |
| 2240 | 231 | | | | | | | | .000 | .000 | |
| 2300 | 237 | | | | | | | 067 | .000 | .000 | |
| 2320 | 249 | | | | | | | 066 | .000 | .000 | |
| 2340 | 272 | | | | | | | 064 | .000 | .000 | |

TABLE A.72 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | DNKD AVERAGE | SINGLE DNKD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0000 | 286 | | | | | | | 072 | 000 | .000 | .000 |
| 0020 | 294 | | | | | | | 068 | 000 | .025 | .000 |
| 0040 | 299 | | | | | | | 067 | 000 | .009 | .000 |
| 0100 | | | | | | | | | | | .008 |
| 0120 | 308 | | | | | | | | | .003 | .000 |
| 0140 | | | | | | | | 066 | 000 | .000 | .000 |
| 0200 | 320 | | | | | | | | | .000 | .000 |
| 0220 | 354 | | | | | | | 062 | 000 | .001 | .000 |
| 0240 | 360 | | | | | | | 066 | 000 | .005 | .000 |
| 0300 | 379 | | | | | | | 064 | 000 | .004 | .000 |
| 0320 | 391 | | | | | | | 060 | 000 | .002 | .000 |
| 0340 | 388 | | | | | | | 075 | 000 | .000 | .000 |
| 0400 | 398 | | | | | | | 053 | 000 | .005 | .000 |
| 0420 | 410 | | | | | | | 043 | 000 | .000 | .000 |
| 0440 | 389 | | | | | | | 040 | 000 | .002 | .000 |
| 0500 | 375 | | | | | | | 040 | 000 | .000 | .000 |
| 0520 | 344 | | | | | | | 040 | 000 | .000 | .000 |
| 0540 | 300 | | | | | | | 040 | 000 | .000 | .000 |
| 0600 | 276 | | | | | | | 040 | 000 | .000 | .000 |
| 0620 | 262 | | | | | | | 040 | 000 | .000 | .000 |
| 0640 | 242 | | | | | | | 040 | 000 | .000 | .000 |
| 0700 | 235 | | | | | | | 040 | 000 | .000 | .000 |
| 0720 | 230 | | | | | | | 040 | 000 | .000 | .000 |
| 0740 | 212 | | | | | | | 040 | 000 | .000 | .000 |
| 0800 | 184 | | | | | | | 040 | 000 | .044 | .092 |
| 0820 | 232 | | | | | | | 040 | 000 | .009 | .000 |
| 0840 | 231 | | | | | | | 040 | 000 | .000 | .000 |
| 0900 | 233 | | | | | | | 040 | 000 | .021 | .000 |
| 0920 | 231 | | | | | | | 040 | 000 | .012 | .000 |
| 0940 | | | | | | | | 040 | 000 | .083 | .000 |
| 1000 | 311 | | | | | | | | | .034 | .000 |
| 1020 | | | | | | | | 066 | 000 | .007 | .000 |
| 1040 | 249 | | | | | | | | | .000 | .059 |
| 1100 | 314 | | | | | | | 040 | 000 | .008 | .021 |
| 1120 | 275 | | | | | | | 040 | 000 | .045 | .189 |
| 1140 | 278 | | | | | | | 040 | 000 | .033 | .073 |
| | | | | | | | | 040 | 000 | .027 | .000 |

TABLE A.73 ROI-NAMUR TO VITI LEVU, KING FISH

1210 CRT 1 NOV.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 1200 | 226 | | | | | | | 042 | 000 | .016 | .066 |
| 1220 | 212 | | | | | | | 040 | 000 | .011 | .033 |
| 1240 | 201 | | | | | | | 040 | 000 | .122 | .000 |
| 1300 | 289 | | | | | | | 040 | 000 | .097 | .043 |
| 1320 | 238 | | | | | | | 040 | 000 | .100 | .037 |
| 1340 | 298 | | | | | | | 040 | .186 | .159 | .017 |
| 1400 | 223 | | | | | | | 040 | 000 | .089 | .043 |
| 1420 | 189 | | | | | | | 040 | 000 | .074 | .053 |
| 1440 | 213 | | | | | | | 040 | 000 | .102 | .031 |
| 1500 | 188 | | | | | | | 040 | 000 | .015 | .046 |
| 1520 | 175 | | | | | | | 040 | 000 | .041 | .124 |
| 1540 | 150 | | | | | | | 040 | 000 | .102 | .144 |
| 1600 | | | | | | | | | | | .128 |
| 1620 | 149 | | | | | | | 040 | 000 | .159 | .119 |
| 1640 | 142 | | | | | | | 040 | 000 | .122 | .057 |
| 1700 | 135 | | | | | | | 040 | 000 | .106 | .090 |
| 1720 | 132 | | | | | | | 040 | 000 | .061 | .063 |
| 1740 | 135 | | | | | | | 040 | 000 | .117 | .095 |
| 1800 | 159 | | | | | | | 040 | 000 | .146 | .140 |
| 1820 | 197 | | | | | | | 040 | 000 | .013 | .000 |
| 1840 | 232 | | | | | | | 040 | 000 | .013 | .000 |
| 1900 | 256 | | | | | | | 040 | 000 | .005 | .014 |
| 1920 | 271 | | | | | | | 040 | 000 | .000 | .000 |
| 1940 | 263 | | | | | | | 040 | 000 | .000 | .000 |
| 2000 | 259 | | | | | | | 040 | 000 | .000 | .000 |
| 2020 | 262 | | | | | | | 040 | 000 | .000 | .000 |
| 2040 | | | | | | | | 040 | 000 | .000 | .000 |
| 2100 | 274 | | | | | | | 052 | 000 | .000 | .000 |
| 2120 | 269 | | | | | | | 060 | 000 | .000 | .000 |
| 2140 | 267 | | | | | | | 052 | 000 | .000 | .000 |
| 2200 | 270 | | | | | | | 061 | 000 | .011 | .034 |
| 2220 | 279 | | | | | | | 061 | 000 | .004 | .014 |
| 2240 | 292 | | | | | | | 070 | 000 | .000 | .000 |
| 2300 | 309 | | | | | | | 088 | 000 | .000 | .000 |
| 2320 | 321 | | | | | | | 089 | 000 | .000 | .000 |
| 2340 | 316 | | | | | | | 092 | 000 | .000 | .000 |

TABLE A.73 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0000 | 315 | | | | | | | 103 | 000 | .000 | .000 |
| 0020 | 327 | | | | | | | 100 | 000 | .000 | .000 |
| 0040 | 341 | | | | | | | 107 | 000 | .000 | .000 |
| 0100 | 339 | | | | | | | 109 | 000 | .000 | .000 |
| 0120 | 346 | | | | | | | 105 | 000 | .000 | .000 |
| 0140 | 326 | | | | | | | 093 | 000 | .000 | .000 |
| 0200 | 340 | | | | | | | 090 | 000 | .000 | .000 |
| 0220 | 040 | | | | | | | 040 | 000 | .004 | .000 |
| 0240 | 360 | | | | | | | 076 | 000 | .000 | .000 |
| 0300 | 392 | | | | | | | 070 | 000 | .000 | .000 |
| 0340 | 400 | | | | | | | 057 | 000 | .000 | .000 |
| 0400 | 400 | | | | | | | 063 | 000 | .000 | .000 |
| 0420 | | | | | | | | | | | |
| 0440 | 407 | | | | | | | 052 | 000 | .000 | .000 |
| 0500 | 385 | | | | | | | 042 | 000 | .009 | .000 |
| 0520 | 362 | | | | | | | 044 | 000 | .000 | .000 |
| 0540 | 321 | | | | | | | 043 | 000 | .000 | .000 |
| 0600 | 291 | | | | | | | 040 | 000 | .000 | .000 |
| 0620 | 269 | | | | | | | 040 | 000 | .000 | .000 |
| 0640 | 265 | | | | | | | 040 | 000 | .000 | .000 |
| 0700 | 248 | | | | | | | 040 | 000 | .000 | .000 |
| 0720 | 237 | | | | | | | 040 | 000 | .000 | .000 |
| 0740 | 224 | | | | | | | 040 | 000 | .000 | .000 |
| 0800 | 211 | | | | | | | 040 | 000 | .000 | .000 |
| 0820 | | | | | | | | | | .155 | .000 |
| 0840 | | | | | | | | | | .000 | .000 |
| 0900 | 215 | | | | | | | 040 | 000 | .028 | .249 |
| 0920 | 238 | | | | | | | 040 | 000 | .064 | .140 |
| 0940 | 247 | | | | | | | 040 | 000 | .000 | .176 |
| 1000 | 238 | | | | | | | 040 | 000 | .075 | .210 |
| 1020 | 240 | | | | | | | 040 | 000 | .035 | .139 |
| 1040 | 248 | | | | | | | 040 | 000 | .011 | .046 |
| 1100 | 241 | | | | | | | 040 | 000 | .023 | .091 |
| 1120 | 246 | | | | | | | 040 | 000 | .003 | .011 |
| 1140 | 260 | | | | | | | 040 | 000 | .031 | .089 |

TABLE A.74 ROI-NAMUR TO RAROTONGA, KING FISH

1210 CRT 1 REV.

| TIME | MOF | GAPS IN MF SPECTRUM | | | | | | LOF | EVENT DAY | BIKGD AVERAGE | SINGLE BIKGD DAY |
|------|-----|---------------------|---------|--|--|--|--|-----|-----------|---------------|------------------|
| 1200 | 301 | | | | | | | 040 | 000 | .045 | .090 |
| 1220 | 268 | | | | | | | 062 | 000 | .088 | .062 |
| 1240 | 328 | | | | | | | 049 | .015 | .067 | .134 |
| 1300 | 359 | | | | | | | 063 | .029 | .212 | .187 |
| 1320 | 320 | | 122-117 | | | | | 045 | .070 | .136 | .082 |
| 1340 | 276 | | | | | | | 054 | .092 | .131 | .189 |
| 1400 | 234 | | | | | | | 043 | .178 | .192 | .192 |
| 1420 | 182 | 207-198 | | | | | | 055 | .141 | .156 | .156 |
| 1440 | 183 | | | | | | | 044 | .091 | .167 | .136 |
| 1500 | 144 | | | | | | | 046 | .232 | .296 | .229 |
| 1520 | 153 | | | | | | | 040 | .400 | .400 | .198 |
| 1540 | 144 | | | | | | | 040 | .200 | .158 | .158 |
| 1600 | 133 | | | | | | | 040 | .129 | .108 | .108 |
| 1620 | 140 | | | | | | | 040 | .093 | .022 | .022 |
| 1640 | 140 | | | | | | | 044 | .044 | .044 | .044 |
| 1700 | 149 | | | | | | | 048 | .009 | .009 | .000 |
| 1720 | 157 | | | | | | | 057 | .008 | .000 | .018 |
| 1740 | 172 | | | | | | | 076 | .057 | .000 | .000 |
| 1800 | 265 | | | | | | | 062 | .106 | .057 | .000 |
| 1820 | 277 | | | | | | | 071 | .014 | .000 | .000 |
| 1840 | 297 | | | | | | | 078 | .000 | .028 | .000 |
| 1900 | 305 | | | | | | | 076 | .000 | .038 | .061 |
| 1920 | 302 | | | | | | | 077 | .000 | .004 | .000 |
| 1940 | 309 | | | | | | | 079 | .000 | .003 | .000 |
| 2000 | 309 | | | | | | | 090 | .000 | .003 | .000 |
| 2020 | 315 | | | | | | | 092 | .000 | .024 | .000 |
| 2040 | 331 | | | | | | | 107 | .000 | .000 | .000 |
| 2100 | 335 | | | | | | | 101 | .000 | .033 | .100 |
| 2120 | 335 | | | | | | | 101 | .000 | .038 | .000 |
| 2140 | 351 | | | | | | | 107 | .000 | .081 | .044 |
| 2200 | 351 | | | | | | | 107 | .000 | .095 | .190 |
| 2220 | 352 | | | | | | | 107 | .000 | .058 | .056 |
| 2240 | 354 | | | | | | | 099 | .020 | .000 | .000 |
| 2300 | 350 | | | | | | | 101 | .000 | .051 | .000 |
| 2320 | 350 | | | | | | | 094 | .039 | .000 | .000 |
| 2340 | 348 | | | | | | | | | .000 | .000 |

TABLE A.74 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|---------|--|-----|-----------|--------------|-----------------|
| 0000 | 353 | | | | | | | 107 | 000 | .110 | .000 |
| 0020 | 357 | | | | | | | 100 | .062 | .073 | .000 |
| 0040 | | | | | | | | | | | .000 |
| 0100 | 319 | | | | | | | 090 | .022 | .024 | .024 |
| 0120 | 349 | | | | | | | 093 | 000 | .154 | .000 |
| 0140 | 350 | | | | | | | 107 | .023 | .070 | .000 |
| 0200 | 320 | | | | | | | 107 | 000 | .046 | .000 |
| 0220 | 352 | | | | | | | 086 | .094 | .112 | .115 |
| 0240 | 353 | 339-316 | | | | | | 082 | .060 | .116 | .106 |
| 0300 | 318 | | | | | | | 082 | .072 | .010 | .000 |
| 0320 | 341 | | | | | | | 106 | .069 | .044 | .039 |
| 0340 | 340 | | | | | | | 054 | 000 | .028 | .065 |
| 0400 | 345 | | | | | | | | 000 | .000 | .000 |
| 0420 | | | | | | | | | | | .000 |
| 0440 | 334 | | | | | | | 064 | .063 | .047 | .113 |
| 0500 | 310 | | | | | | | 067 | .053 | .025 | .031 |
| 0520 | 296 | | | | | | | 040 | .055 | .028 | .041 |
| 0540 | 263 | | | | | | | 047 | 000 | .078 | .034 |
| 0600 | 267 | | | | | | | 042 | .044 | .015 | .000 |
| 0620 | 234 | | | | | | | 041 | 000 | .024 | .000 |
| 0640 | 264 | | | | | | | 040 | .179 | .081 | .000 |
| 0700 | 250 | | | | | | | 040 | .243 | .029 | .058 |
| 0720 | 173 | | | | | 226-175 | | 042 | 000 | .076 | .046 |
| 0740 | 156 | | | | | | | 040 | 000 | .117 | .086 |
| 0800 | 179 | | | | | | | 043 | 000 | .188 | .347 |
| 0820 | 194 | | | | | | | 041 | 000 | .144 | .000 |
| 0840 | | | | | | | | | | | .631 |
| 0900 | 168 | | | | | | | 041 | 000 | .163 | .265 |
| 0920 | 233 | | | | | | | 040 | 000 | .086 | .085 |
| 0940 | 269 | | | | | 162-153 | | 040 | .057 | .160 | .286 |
| 1000 | 275 | | | | | | | 040 | .047 | .137 | .243 |
| 1020 | 265 | 260-249 | | | | | | 040 | .018 | .060 | .133 |
| 1040 | 271 | | | | | | | 040 | .022 | .109 | .177 |
| 1100 | 316 | | | | | | | 040 | .025 | .095 | .000 |
| 1120 | | | | | | | | | | | .095 |
| 1140 | | | | | | | | | | | .000 |

TABLE A.75 ROI-NAMUR TO MIDWAY, KING FISH

1210 OCT 1 NOV.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | LOF | EVENT DAY | SKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|---------|---------|---------|-----------|--------------|-----------------|
| 1200 | 161 | | | 097-093 | 085-079 | 047-045 | 093 | .000 | .000 |
| 1220 | 163 | | | 097-093 | | | 040 | .010 | .000 |
| 1240 | 150 | | | 075-071 | | | 040 | .000 | .000 |
| 1300 | 127 | | | 096-089 | 086-078 | 047-044 | 040 | .000 | .000 |
| 1320 | 116 | | | 095-090 | | 047-044 | 040 | .143 | .055 |
| 1340 | 131 | | | 083-080 | | 047-045 | 040 | .032 | .097 |
| 1400 | 133 | | | | | 047-045 | 040 | .090 | .149 |
| 1420 | 140 | | | | | 047-045 | 040 | .051 | .037 |
| 1500 | 139 | | | 098-091 | 061-059 | 047-045 | 040 | .064 | .054 |
| 1520 | 148 | | | | | | 040 | .000 | .020 |
| 1540 | 130 | | | 095-092 | 083-079 | | 048 | .102 | .109 |
| 1600 | 135 | | | 082-073 | | | 047 | .047 | .108 |
| 1620 | 125 | | | 083-073 | | | 047 | .192 | .114 |
| 1640 | 125 | | | | | | 047 | .000 | .000 |
| 1700 | 117 | | | 083-070 | | 047-045 | 040 | .068 | .079 |
| 1720 | 111 | | | | | 046-044 | 040 | .130 | .140 |
| 1740 | 122 | | | | | 046-044 | 040 | .132 | .106 |
| 1800 | 151 | | | | | | 040 | .102 | .000 |
| 1820 | 205 | | | | | 046-043 | 040 | .000 | .000 |
| 1840 | 240 | | | | | | 047 | .011 | .021 |
| 1900 | 262 | | | | | | 050 | .054 | .018 |
| 1920 | 266 | | | | | | 051 | .018 | .018 |
| 1940 | 281 | | | | | | 057 | .000 | .011 |
| 2000 | 291 | | | | | | 051 | .000 | .000 |
| 2020 | 292 | | | | | | 062 | .021 | .000 |
| 2040 | 284 | | | | | | 050 | .003 | .009 |
| 2100 | 285 | | | 075-071 | 061-055 | | 041 | .014 | .029 |
| 2120 | 293 | | | 074-070 | | | 066 | .008 | .016 |
| 2140 | 300 | | 189-179 | 075-073 | | | 074 | .022 | .014 |
| 2200 | 309 | | | | | | 077 | .000 | .000 |
| 2220 | 302 | | | | | | 076 | .000 | .000 |
| 2240 | 302 | | | | | | 070 | .000 | .000 |
| 2300 | 302 | | | | | | 053 | .004 | .000 |
| 2320 | 302 | | | | | | 084 | .013 | .000 |
| 2340 | 302 | | | | | | 095 | .000 | .000 |
| 2340 | 3.0 | | | | | | 093 | .009 | .017 |

TABLE A.76 KAUAI TO TUTUILA, KING FISH

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | 1210 CRT 1. 30V. SINGLE BKGD DAY |
|------|-----|---------------------|---------|---------|--|---------|-----|------|-----------|--------------|-------------------------------------|
| | | | | | | | | | | | |
| 1200 | 182 | | 174-138 | 115-099 | | | 040 | .366 | .227 | .427 | |
| 1220 | | | | | | | | | | .497 | |
| 1240 | | | | | | | | | | .391 | |
| 1300 | | | | | | | | | | .261 | |
| 1320 | | | | | | | | | | .188 | |
| 1340 | 149 | | 138-133 | 098-091 | | | 041 | .157 | .064 | .125 | |
| 1400 | | | | | | | | | | .175 | |
| 1420 | 084 | | | | | | | | | .253 | |
| 1440 | 128 | | | 125-090 | | | 040 | .000 | .253 | .333 | |
| 1500 | 114 | | | 109-088 | | | 040 | .398 | .119 | .242 | |
| 1520 | 113 | | | 108-092 | | | 040 | .284 | .050 | .100 | |
| 1540 | 128 | | | 073-070 | | | 040 | .260 | .102 | .073 | |
| 1600 | 127 | | | 075-070 | | | 040 | .409 | .040 | .000 | |
| 1620 | 079 | | | 123-093 | | | 040 | .345 | .109 | .000 | |
| 1640 | | | | 075-070 | | | 045 | .265 | .068 | .000 | |
| 1700 | 180 | | | | | 052-048 | | .000 | .000 | .048 | |
| 1720 | 206 | | | | | | 121 | .000 | .179 | .030 | |
| 1740 | 210 | | | | | | 116 | .000 | .104 | .016 | |
| 1800 | | | | | | | 124 | .000 | .146 | .000 | |
| 1820 | | | | | | | | | | .022 | |
| 1840 | 280 | | | | | | | | | .000 | |
| 1900 | 265 | | | | | | | | | .000 | |
| 1920 | 272 | | | | | | 123 | .000 | .061 | .000 | |
| 1940 | 243 | | | | | | 125 | .000 | .044 | .024 | |
| 2000 | 257 | | | | | | 147 | .000 | .009 | .028 | |
| 2020 | 264 | | | | | | 132 | .000 | .019 | .000 | |
| 2040 | 251 | | | | | | 123 | .000 | .000 | .000 | |
| 2100 | 267 | | | | | | 126 | .000 | .000 | .000 | |
| 2120 | 269 | | | | | | 142 | .000 | .000 | .000 | |
| 2140 | 263 | | | | | | 123 | .000 | .005 | .000 | |
| 2200 | 228 | | | | | | 129 | .000 | .000 | .000 | |
| 2220 | | | | | | | 126 | .000 | .006 | .000 | |
| 2240 | | | | | | | 126 | .000 | .029 | .000 | |
| 2300 | 305 | | | | | 198-153 | 124 | .249 | .000 | .000 | |
| 2320 | 283 | | | | | | 124 | .000 | .000 | .000 | |
| 2340 | 276 | | | | | 209-165 | 115 | .000 | .000 | .000 | |
| | 305 | | | | | | 114 | .320 | .000 | .000 | |

TABLE A.76 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0000 | 325 | | | | | | | 108 | .018 | .030 | .000 |
| 0020 | 313 | | | | | | | 110 | .000 | .080 | .000 |
| 0040 | 308 | | | | | | | 075 | .052 | .023 | .000 |
| 0100 | 282 | | | | | | | | | | .000 |
| 0140 | 299 | | | | | | | 067 | .000 | .009 | .000 |
| 0200 | 304 | | | | | | | 066 | .064 | .027 | .000 |
| 0220 | 315 | | | | | | | 056 | .052 | .040 | .000 |
| 0240 | 314 | | | | | | | 052 | .061 | .028 | .000 |
| 0300 | 320 | | | | | | | 047 | .045 | .067 | .000 |
| 0320 | 323 | | | | | | | 046 | .044 | .025 | .000 |
| 0340 | 317 | | | | | | | 045 | .000 | .019 | .000 |
| 0400 | 316 | | | | | | | 046 | .000 | .000 | .000 |
| 0420 | 313 | | | | | | | 043 | .000 | .005 | .000 |
| 0440 | 293 | | | | | | | 040 | .000 | .010 | .000 |
| 0500 | 263 | | | | | | | 040 | .000 | .022 | .000 |
| 0520 | 241 | | | | | | | 040 | .000 | .000 | .000 |
| 0540 | 237 | | | | | | | 040 | .000 | .008 | .000 |
| 0600 | 228 | | | | | | | 040 | .000 | .017 | .000 |
| 0620 | 191 | | | | | | | 040 | .000 | .027 | .000 |
| 0640 | 187 | | | | | | | 040 | .000 | .000 | .000 |
| 0700 | 175 | | | | | | | 040 | .000 | .130 | .044 |
| 0720 | 147 | | | | | | | 040 | .000 | .054 | .012 |
| 0740 | 158 | | | | | | | 040 | .000 | .122 | .212 |
| 0800 | 138 | | | | | | | 040 | .000 | .167 | .260 |
| 0820 | 141 | | | | | | | 040 | .000 | .337 | .419 |
| 0840 | 196 | | | | | | | 040 | .000 | .496 | .683 |
| 0900 | 212 | | | | | | | 040 | .000 | .129 | .001 |
| 0920 | 188 | | | | | | | 040 | .000 | .263 | .108 |
| 0940 | 053 | | | | | | | 040 | .000 | .238 | .103 |
| 1000 | 158 | | | | | | | 040 | .000 | .255 | .000 |
| 1020 | | | | | | | | 040 | .000 | .298 | .448 |
| 1040 | 149 | | | | | | | 040 | .000 | .294 | .000 |
| 1100 | 157 | | | | | | | 040 | .000 | .385 | .456 |
| 1120 | 241 | | | | | | | 041 | .250 | .362 | .563 |
| 1140 | 133 | | | | | | | 041 | .000 | .299 | .567 |
| | | | | | | | | | | | .149 |

TABLE A.77 ROI-NAMUR TO PALO ALTO, KING FISH

1210 GMT 1 NOV.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|---------|---------|--|-----|-----------|--------------|-----------------|
| 1200 | 122 | | | | | | | 054 | 000 | .066 | .000 |
| 1220 | 139 | | | | | | | 041 | 000 | .067 | .212 |
| 1300 | 103 | | | | | | | 040 | 000 | .129 | .240 |
| 1320 | 060 | | | | | | | 041 | 000 | .000 | .000 |
| 1340 | 092 | | | | | | | 041 | 000 | .080 | .060 |
| 1400 | 088 | | | | | | | 041 | .278 | .021 | .063 |
| 1440 | 074 | | | 085-074 | | | | 041 | .319 | .036 | .108 |
| 1500 | 078 | | | | | | | 041 | 000 | .090 | .180 |
| 1520 | 126 | | | 103-075 | | | | 041 | 000 | .107 | .213 |
| 1540 | 103 | | | | | | | 043 | .329 | .083 | .167 |
| 1600 | 133 | | | | | | | 055 | 000 | .000 | .000 |
| 1620 | 131 | | | | | | | 055 | 000 | .000 | .000 |
| 1640 | 127 | | | | | | | 118 | 000 | .000 | .000 |
| 1700 | 127 | | | | | | | 118 | 000 | .250 | .000 |
| 1720 | 127 | | | | | | | | 000 | .000 | .000 |
| 1740 | | | | | | | | | 000 | .000 | .000 |
| 1800 | | | | | | | | | 000 | .000 | .000 |
| 1820 | 193 | | | | | | | 170 | 000 | .000 | .000 |
| 1840 | 230 | | | | | 167-156 | | 119 | .198 | .234 | .000 |
| 1900 | 249 | | | | | 139-128 | | 140 | 000 | .071 | .177 |
| 1920 | | | | | | | | | 000 | .000 | .000 |
| 1940 | 303 | | | | | | | 129 | .287 | .059 | .000 |
| 2000 | | | | | 290-256 | | | | 000 | .000 | .000 |
| 2020 | | | | | | | | | 000 | .000 | .000 |
| 2040 | 237 | | | | | | | 130 | 000 | .000 | .000 |
| 2100 | 255 | | | | | | | 131 | 000 | .016 | .000 |
| 2120 | 255 | | | | | 151-135 | | 130 | 000 | .000 | .000 |
| 2140 | | | | | | | | | 000 | .000 | .000 |
| 2200 | 233 | | | | | | | 127 | 000 | .036 | .000 |
| 2220 | 259 | | | | | | | 130 | 000 | .000 | .000 |
| 2240 | 262 | | | | | | | 158 | 000 | .000 | .000 |
| 2300 | 270 | | | | | | | 195 | 000 | .000 | .000 |
| 2320 | 270 | | | | | | | 196 | 000 | .000 | .000 |
| 2340 | 269 | | | | | | | 118 | 000 | .051 | .000 |
| | | | | | | | | | 000 | .000 | .000 |

TABLE A.77 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | EMGD AVERAGE | SINGLE EMGD DAY |
|------|-----|---------------------|--|--|--|---------|--|-----|-----------|--------------|-----------------|
| 0000 | 297 | | | | | | | 092 | 000 | .000 | .000 |
| 0020 | 276 | | | | | | | 130 | 000 | .000 | .000 |
| 0040 | 295 | | | | | | | 126 | 000 | .000 | .000 |
| 0100 | | | | | | | | | | .000 | .000 |
| 0120 | | | | | | | | | | .000 | .000 |
| 0140 | | | | | | | | | | .000 | .000 |
| 0200 | 282 | | | | | | | 127 | 000 | .069 | .000 |
| 0220 | 237 | | | | | | | 142 | 000 | .124 | .000 |
| 0240 | | | | | | | | | | .224 | .000 |
| 0300 | | | | | | | | | | .203 | .000 |
| 0320 | | | | | | | | | | .177 | .000 |
| 0340 | 040 | | | | | | | 040 | B | .000 | .000 |
| 0400 | 102 | | | | | | | 069 | 000 | .000 | .000 |
| 0420 | 094 | | | | | | | 075 | 000 | .071 | .000 |
| 0440 | 076 | | | | | | | 078 | 000 | .014 | .000 |
| 0500 | 081 | | | | | | | 060 | .333 | .045 | .134 |
| 0520 | 094 | | | | | 073-066 | | 056 | 000 | .055 | .104 |
| 0540 | 062 | | | | | | | 053 | 000 | .020 | .059 |
| 0600 | 104 | | | | | | | 040 | .250 | .000 | .000 |
| 0620 | 070 | | | | | | | 056 | 000 | .038 | .113 |
| 0640 | 095 | | | | | 087-071 | | 071 | 000 | .018 | .000 |
| 0700 | 092 | | | | | | | 043 | 000 | .000 | .000 |
| 0720 | 101 | | | | | | | 045 | .232 | .113 | .225 |
| 0740 | 101 | | | | | | | 040 | 000 | .020 | .000 |
| 0800 | 040 | | | | | | | 040 | B | .050 | .078 |
| 0820 | | | | | | | | | | .000 | .000 |
| 0840 | | | | | | | | | | .022 | .022 |
| 0900 | | | | | | | | | | .065 | .065 |
| 0920 | 108 | | | | | | | 049 | 000 | .206 | .098 |
| 0940 | 107 | | | | | | | 045 | 000 | .075 | .073 |
| 1000 | 101 | | | | | | | 044 | 000 | .064 | .045 |
| 1020 | 107 | | | | | | | 043 | 000 | .000 | .082 |
| 1040 | 255 | | | | | | | 040 | 000 | .000 | .086 |
| 1100 | 249 | | | | | | | 040 | 000 | .000 | .038 |
| 1120 | 220 | | | | | | | 040 | 000 | .000 | .065 |
| 1140 | 227 | | | | | | | 040 | 000 | .009 | .041 |
| | | | | | | | | 040 | 000 | .000 | .000 |
| | | | | | | | | | | .060-055 | |

TABLE A.78 OKINAWA TO HAWAII, KING FISH

1210 GMT 1 NOV.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|-----|-----------|--------------|-----------------|
| 1200 | 070 | | | | | 054 | 000 | .291 | .000 |
| 1220 | 135 | | | | | 101 | .353 | .158 | .000 |
| 1240 | 040 | | | | | 040 | B | .274 | .000 |
| 1300 | 116 | | | | | 085 | 000 | .133 | .000 |
| 1320 | | | | | | | | .000 | .000 |
| 1340 | | | | | | | | .000 | .000 |
| 1400 | | | | | | | | .000 | .000 |
| 1420 | | | | | | | | .000 | .000 |
| 1440 | | | | | | | | .000 | .000 |
| 1500 | | | | | | | | .000 | .000 |
| 1520 | | | | | | | | .000 | .000 |
| 1540 | 067 | | | | | 054 | .615 | .001 | .000 |
| 1600 | 040 | | | | | 040 | B | .293 | .000 |
| 1620 | 040 | | | | | 040 | B | .000 | .000 |
| 1640 | 040 | | | | | 040 | B | .000 | .000 |
| 1700 | | | | | | | | .000 | .000 |
| 1720 | 111 | | | | | | | .000 | .000 |
| 1740 | 103 | | | | | | | .352 | .000 |
| 1800 | 135 | | | | | 056 | .286 | .593 | .000 |
| 1820 | 069 | | | | | 061 | .333 | .363 | .000 |
| 1840 | 070 | | | | | 059 | 000 | .715 | .000 |
| 1900 | 110 | | | | | 063 | 000 | .217 | .001 |
| 1920 | 076 | | | | | 063 | 000 | .235 | .129 |
| 1940 | | | | | | 062 | 000 | .000 | .000 |
| 2000 | | | | | | | | .000 | .000 |
| 2020 | | | | | | | | .000 | .000 |
| 2040 | 142 | | | | | 127 | 000 | .151 | .000 |
| 2100 | 154 | | | | | 086 | 000 | .110 | .000 |
| 2120 | 155 | | | | | 087 | 000 | .105 | .329 |
| 2140 | 237 | | | | | 096 | 000 | .207 | .000 |
| 2200 | 257 | | | | | 125 | 000 | .043 | .053 |
| 2220 | 248 | | | | | 125 | 000 | .114 | .000 |
| 2240 | 247 | | | | | 125 | 000 | .025 | .000 |
| 2300 | 254 | | | | | 108 | 000 | .180 | .214 |
| 2320 | 272 | | | | | 127 | 000 | .232 | .353 |
| 2340 | 297 | | | | | 126 | 000 | .000 | .000 |
| | | | | | | | | .228 | .295 |

TABLE A.78 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BIKED AVERAGE | SINGLE BIKED DAY |
|------|-----|---------------------|---------|---------|---------|--|-----|------|-----------|---------------|------------------|
| 0000 | 295 | 184-172 | 157-143 | | | | 123 | .151 | .180 | .000 | |
| 0020 | 303 | 185-173 | 149-143 | | | | 124 | .101 | .223 | .000 | |
| 0040 | 325 | 187-172 | 161-153 | | | | 159 | .086 | .109 | .000 | |
| 0100 | 334 | 188-172 | 160-145 | | | | 124 | .118 | .022 | .000 | |
| 0120 | 327 | 159-140 | | | | | 139 | .140 | .032 | .000 | |
| 0140 | 360 | 183-175 | | | | | 129 | .084 | .018 | .000 | |
| 0200 | 355 | 150-144 | 136-133 | | | | 158 | .000 | .000 | .000 | |
| 0220 | 313 | 149-145 | | | | | 160 | .057 | .067 | .000 | |
| 0300 | 301 | 148-139 | | | | | 146 | .000 | .065 | .000 | |
| 0320 | 293 | 152-146 | | | | | 123 | .060 | .044 | .000 | |
| 0340 | 274 | 200-185 | 147-134 | | | | 122 | .027 | .059 | .000 | |
| 0400 | 274 | 141-135 | 127-116 | | | | 106 | .066 | .118 | .000 | |
| 0420 | 271 | | | 103-096 | | | 090 | .108 | .088 | .000 | |
| 0440 | 242 | | | | | | 097 | .000 | .048 | .000 | |
| 0500 | 210 | | | | | | 087 | .000 | .100 | .000 | |
| 0520 | 145 | | | | | | 087 | .230 | .000 | .000 | |
| 0600 | 142 | | | | | | 088 | .034 | .368 | .000 | |
| 0620 | 209 | | | | | | 088 | .391 | .261 | .000 | |
| 0640 | 175 | | | | | | 040 | B | .226 | .000 | |
| 0700 | 152 | | | | | | 067 | .516 | .284 | .000 | |
| 0720 | 040 | | | | | | 086 | .000 | .242 | .000 | |
| 0740 | 129 | | | 107-093 | 081-070 | | 087 | .268 | .163 | .000 | |
| 0800 | 133 | | | | | | 101 | .290 | .532 | .000 | |
| 0820 | 143 | | | | | | 087 | .455 | .620 | .000 | |
| 0840 | 132 | | | | | | 067 | .155 | .449 | .000 | |
| 0900 | 131 | | | | | | 086 | .281 | .180 | .000 | |
| 0920 | 138 | | | | | | 090 | .122 | .235 | .000 | |
| 0940 | 143 | | | | | | 089 | .000 | .281 | .000 | |
| 1000 | 139 | | | | | | 088 | .113 | .740 | .000 | |
| 1020 | 141 | | | | | | 040 | B | .118 | .000 | |
| 1040 | 141 | | | | | | 056 | .373 | .182 | .000 | |
| 1100 | 040 | | | | | | 040 | B | .247 | .000 | |
| 1120 | 131 | | | | | | | | | | |
| 1140 | 040 | | | | | | | | | | |

TABLE A.79 CANTON TO PALO ALTO, KING FISH

1210 OCT 1 1971

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | LOF | EVENT DAY | DKGD AVERAGE | SINGLE DKGD DAY |
|------|-----|---------------------|--|--|--|--|-----|-----------|--------------|-----------------|
| 1200 | 141 | | | | | | 040 | 000 | .094 | .000 |
| 1220 | | | | | | | | | | .000 |
| 1240 | 122 | | | | | | 040 | 000 | .063 | .000 |
| 1300 | | | | | | | | | | .000 |
| 1320 | | | | | | | | | | .000 |
| 1340 | | | | | | | | | | .000 |
| 1400 | | | | | | | | | | .000 |
| 1420 | 040 | | | | | | 040 | B | .071 | .000 |
| 1440 | 095 | | | | | | 041 | .148 | .041 | .000 |
| 1500 | 101 | | | | | | 041 | .100 | .097 | .000 |
| 1520 | 077 | | | | | | 041 | .083 | .090 | .000 |
| 1540 | 126 | | | | | | 055 | 000 | .163 | .000 |
| 1600 | | | | | | | | | | .000 |
| 1620 | 040 | | | | | | 040 | B | .000 | .000 |
| 1640 | 145 | | | | | | 086 | 000 | .000 | .000 |
| 1700 | 175 | | | | | | 120 | 000 | .000 | .000 |
| 1720 | 205 | | | | | | 116 | 000 | .000 | .000 |
| 1740 | 225 | | | | | | 117 | 000 | .000 | .000 |
| 1800 | 239 | | | | | | 117 | .093 | .000 | .000 |
| 1820 | 255 | | | | | | 116 | .016 | .000 | .000 |
| 1840 | 250 | | | | | | 118 | 000 | .000 | .000 |
| 1900 | 258 | | | | | | 127 | 000 | .000 | .000 |
| 1920 | | | | | | | 151 | 000 | .000 | .000 |
| 1940 | 303 | | | | | | 125 | .101 | .000 | .000 |
| 2000 | | | | | | | | | | .167 |
| 2020 | | | | | | | | | | .000 |
| 2040 | 275 | | | | | | 156 | 000 | .000 | .000 |
| 2100 | 249 | | | | | | 143 | 000 | .000 | .000 |
| 2120 | 284 | | | | | | 148 | 000 | .000 | .000 |
| 2140 | | | | | | | | | | .000 |
| 2200 | 274 | | | | | | 140 | 000 | .000 | .000 |
| 2220 | 279 | | | | | | 144 | 000 | .000 | .000 |
| 2240 | 268 | | | | | | 138 | 000 | .000 | .000 |
| 2300 | 275 | | | | | | 163 | 000 | .000 | .000 |
| 2320 | 275 | | | | | | 166 | 000 | .000 | .000 |
| 2340 | 259 | | | | | | 125 | 000 | .000 | .000 |

TABLE A.79 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--------------------|--|--|-----|-----------|--------------|-----------------|
| 0000 | 251 | | | | | | | | 121 | 000 | .000 | .000 |
| 0020 | 264 | | | | | | | | 126 | 000 | .019 | .000 |
| 0040 | 313 | | | | | | | | 125 | 000 | .000 | .000 |
| 0100 | | | | | | | | | | | .000 | .186 |
| 0120 | | | | | | | | | | | .000 | .000 |
| 0140 | | | | | | | | | | | .000 | .000 |
| 0200 | 251 | | | | | | | | 112 | 000 | .123 | .185 |
| 0220 | 233 | | | | | | | | 101 | 000 | .225 | .320 |
| 0240 | | | | | | | | | | | .000 | .242 |
| 0300 | | | | | | | | | | | .000 | .064 |
| 0320 | | | | | | | | | | | .000 | .047 |
| 0340 | 219 | | | | | | | | 051 | 000 | .033 | .075 |
| 0400 | 203 | | | | | 108-102 | | | 058 | .041 | .045 | .135 |
| 0420 | 360 | | | | | | | | 058 | 000 | .013 | .000 |
| 0440 | 160 | | | | | | | | 040 | 000 | .012 | .000 |
| 0500 | 129 | | | | | | | | 040 | 000 | .024 | .000 |
| 0520 | 079 | | | | | | | | 040 | 000 | .087 | .000 |
| 0540 | 103 | | | | | 074-070 086-075 | | | 040 | .175 | .076 | .000 |
| 0600 | 123 | | | | | | | | 040 | 000 | .103 | .000 |
| 0620 | 103 | | | | | | | | 040 | 000 | .064 | .000 |
| 0640 | 097 | | | | | | | | 040 | 000 | .156 | .125 |
| 0700 | 083 | | | | | | | | 047 | 000 | .056 | .113 |
| 0720 | 074 | | | | | | | | 059 | .467 | .032 | .065 |
| 0740 | 070 | | | | | 070-063 | | | 040 | 000 | .038 | .114 |
| 0800 | 040 | | | | | | | | 040 | B | .135 | .254 |
| 0820 | | | | | | | | | | | .000 | .480 |
| 0840 | | | | | | | | | | | .000 | .469 |
| 0900 | | | | | | | | | 040 | 000 | .209 | .520 |
| 0920 | 110 | | | | | | | | 040 | B | .064 | .333 |
| 0940 | 040 | | | | | | | | 040 | 000 | .000 | .214 |
| 1000 | 110 | | | | | | | | 041 | 000 | .000 | .000 |
| 1020 | 095 | | | | | | | | 041 | 000 | .072 | .288 |
| 1040 | 205 | | | | | | | | 041 | 000 | .128 | .400 |
| 1100 | 092 | | | | | | | | 042 | 000 | .000 | .000 |
| 1120 | 094 | | | | | | | | 042 | 000 | .000 | .000 |
| 1140 | 090 | | | | | | | | 041 | 000 | .103 | .000 |

TABLE A.80 KAUAI TO FAIRBANKS, KING FISH

1210 OCT 1 1977.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 1200 | | | | | | | | | 040 | 000 | .000 | .000 |
| 1220 | 078 | | | | | | | | 041 | 000 | .000 | .000 |
| 1240 | 132 | | | | | | | | 040 | 000 | .000 | .000 |
| 1300 | 158 | | | | | | | | 041 | 000 | .000 | .000 |
| 1320 | 074 | | | | | | | | 042 | 000 | .000 | .000 |
| 1340 | 058 | | | | | | | | 040 | 000 | .000 | .000 |
| 1400 | 075 | | | | | | | | 040 | 000 | .000 | .000 |
| 1420 | 079 | | | | | | | | 041 | .079 | .053 | .089 |
| 1440 | | | | | | | | | | | | |
| 1500 | 068 | | | | | | | | 041 | 000 | .000 | .000 |
| 1520 | 075 | | | | | | | | 040 | 000 | .000 | .000 |
| 1540 | 080 | | | | | | | | 042 | 000 | .000 | .000 |
| 1600 | 079 | | | | | | | | 042 | 000 | .000 | .000 |
| 1620 | 089 | | | | | | | | 040 | 000 | .000 | .000 |
| 1640 | 106 | | | | | | | | 040 | 000 | .000 | .000 |
| 1700 | 132 | | | | | | | | 056 | 000 | .000 | .000 |
| 1720 | 152 | | | | | | | | 053 | 000 | .036 | .079 |
| 1740 | 152 | | | | | | | | 071 | 000 | .020 | .063 |
| 1800 | 194 | | | | | | | | 077 | 000 | .000 | .000 |
| 1820 | 199 | | | | | | | | 105 | 000 | .000 | .000 |
| 1840 | 208 | | | | | | | | 109 | 000 | .000 | .000 |
| 1900 | 200 | | | | | | | | 106 | 000 | .000 | .000 |
| 1920 | 218 | | | | | | | | 106 | 000 | .000 | .000 |
| 1940 | 229 | | | | | | | | 112 | 000 | .000 | .000 |
| 2000 | 237 | | | | | | | | 127 | 000 | .000 | .000 |
| 2020 | 250 | | | | | | | | 113 | 000 | .000 | .000 |
| 2040 | 225 | | | | | | | | 127 | 000 | .000 | .000 |
| 2100 | 223 | | | | | | | | 128 | 000 | .052 | .052 |
| 2120 | | | | | | | | | | | | |
| 2140 | 241 | | | | | | | | 139 | 000 | .016 | .032 |
| 2200 | 232 | | | | | | | | 125 | 000 | .032 | .063 |
| 2220 | 234 | | | | | | | | 130 | 000 | .000 | .000 |
| 2240 | 236 | | | | | | | | 132 | 000 | .115 | .346 |
| 2300 | 233 | | | | | | | | 133 | 000 | .119 | .238 |
| 2320 | 231 | | | | | | | | 137 | 000 | .064 | .190 |
| 2340 | 232 | | | | | | | | 142 | 000 | .079 | .169 |

TABLE A.81 KAUAI TO RAROTONGA, KING FISH

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|-------------------------------|-------------------------------|--------------------|-------------------------------|--------------------|---------|-----|-----------|--------------|-----------------|
| | | 546-517 | 429-317 | 361-320 282-177 | 280-151 142-131 | 122-114 121-114 | 096-079 106-088 | 075-071 | | | | |
| 1200 | 640 | | | | | | | | 040 | .278 | .211 | .077 |
| 1220 | 150 | | | | | | | | 049 | .218 | .348 | .340 |
| 1240 | | | | | | | | | | | .211 | .195 |
| 1300 | 640 | 590-502 | 475-395 546-311 | 361-320 282-177 | 280-151 142-131 | 122-114 121-114 | 096-079 106-088 | 075-071 | 040 | .615 | .220 | .225 |
| 1320 | 640 | | | | | | | | 040 | .615 | .524 | .397 |
| 1340 | | | | | | | | | | | .340 | .340 |
| 1400 | 640 | 544-528 543-431 | 549-311 448-319 407-279 | 288-152 279-257 249-131 | 147-141 230-174 | 122-114 110-094 100-093 | 096-079 106-088 | 084-079 | 040 | .660 | .479 | .372 |
| 1420 | 640 | | | | | | | | 045 | .402 | .454 | .402 |
| 1440 | 612 | | | | | | | | 040 | .638 | .430 | .372 |
| 1500 | | | | | | | | | | | .217 | .217 |
| 1520 | 640 | 587-569 | 537-322 | 275-156 | | 233-084 109-087 | 096-079 106-088 | 067-056 | 040 | .637 | .460 | .346 |
| 1600 | 310 | | | | | | | | 040 | .563 | .265 | .200 |
| 1620 | | | | | | | | | | | .200 | .200 |
| 1640 | 164 | | | | | | | | | | .265 | .200 |
| 1700 | 189 | | | | | | | | 055 | .284 | .424 | .101 |
| 1720 | | | | | | | | | 063 | .135 | .532 | .481 |
| 1740 | 278 | | | | | | | | | | .275 | .578 |
| 1800 | 302 | | 256-239 289-216 | | | 108-089 103-093 | 076-068 075-068 | 063-059 | | | .236 | .236 |
| 1820 | | | | | | | | | 113 | .103 | .275 | .299 |
| 1840 | 314 | | | | | 100-082 | 074-066 | | 059 | .407 | .220 | .215 |
| 1900 | 306 | | | | | | | | 091 | .000 | .144 | .232 |
| 1920 | 294 | | | | | | 075-071 088-082 | | 068 | .017 | .169 | .099 |
| 1940 | 287 | | | | | | 088-081 | | 059 | .026 | .187 | .090 |
| 2000 | 293 | | | | | | 096-080 | | 069 | .032 | .083 | .000 |
| 2020 | 300 | | | | | | | | 075 | .073 | .168 | .037 |
| 2040 | 296 | | | | | | | | 106 | .000 | .023 | .167 |
| 2100 | 303 | | | | | | | | 102 | .000 | .023 | .023 |
| 2120 | 309 | | | 162-156 | 122-117 | | | | 102 | .000 | .134 | .134 |
| 2140 | 276 | | | 184-159 | | | | | 108 | .055 | .188 | .186 |
| 2200 | 398 | | 385-319 | 194-160 | 157-152 | | | | 108 | .079 | .090 | .079 |
| 2220 | 319 | | | 206-155 | | | | | 121 | .397 | .057 | .000 |
| 2240 | 317 | | | 204-160 | 124-114 | | | | 125 | .253 | .149 | .139 |
| 2300 | 319 | | | 205-171 | | | | | 111 | .262 | .147 | .000 |
| 2320 | 319 | | | 209-172 | | | | | 117 | .168 | .053 | .000 |
| 2340 | 319 | | 209-196 | 185-160 | | | | | 125 | .191 | .236 | .000 |
| | | | | | | | | | 117 | .188 | .218 | .000 |

1210 OCT 1 NOV.

TABLE A.81 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0000 | 320 | | | | | | | | 125 | .236 | .138 | .000 |
| 0020 | 319 | | | | | | | | 110 | .268 | .115 | .000 |
| 0100 | 337 | | | | | | | | | | .121 | .204 |
| 0120 | 351 | | | | | | | | 107 | .043 | .205 | .000 |
| 0140 | 352 | | | | | | | | 125 | .066 | .104 | .269 |
| 0200 | 351 | | | | | | | | 092 | .213 | .122 | .000 |
| 0220 | 358 | | | | | | | | 113 | .108 | .112 | .112 |
| 0240 | 368 | | | | | | | | 107 | .000 | .314 | .556 |
| 0300 | 365 | | | | | | | | 077 | .000 | .364 | .759 |
| 0320 | 358 | | | | | | | | 067 | .097 | .199 | .284 |
| 0340 | 352 | | | | | | | | 062 | .168 | .076 | .161 |
| 0400 | 358 | | | | | | | | 064 | .007 | .064 | .087 |
| 0420 | | | | | | | | | | .061 | .000 | .000 |
| 0440 | 306 | | | | | | | | 041 | .000 | .110 | .000 |
| 0500 | 318 | | | | | | | | 040 | .025 | .017 | .000 |
| 0520 | 640 | | | | | | | | 040 | .000 | .056 | .000 |
| 0540 | 629 | | | | | | | | 040 | .000 | .001 | .000 |
| 0600 | 640 | | | | | | | | 040 | .616 | .000 | .000 |
| 0620 | 621 | | | | | | | | 040 | .378 | .000 | .000 |
| 0640 | 640 | | | | | | | | 040 | .491 | .035 | .035 |
| 0700 | 640 | | | | | | | | 040 | .318 | .174 | .162 |
| 0720 | 640 | | | | | | | | 040 | .348 | .015 | .030 |
| 0740 | 640 | | | | | | | | 040 | .317 | .000 | .000 |
| 0800 | 640 | | | | | | | | 040 | .455 | .470 | .000 |
| 0820 | 640 | | | | | | | | 041 | .411 | .499 | .000 |
| 0840 | 640 | | | | | | | | 040 | .208 | .323 | .000 |
| 0900 | 640 | | | | | | | | 040 | .278 | .243 | .268 |
| 0920 | 640 | | | | | | | | 040 | .450 | .426 | .079 |
| 0940 | 640 | | | | | | | | 040 | .423 | .415 | .030 |
| 1000 | 313 | | | | | | | | 040 | .483 | .514 | .128 |
| 1020 | 640 | | | | | | | | 040 | .128 | .384 | .213 |
| 1040 | 640 | | | | | | | | 042 | .515 | .403 | .145 |
| 1100 | 640 | | | | | | | | 040 | .473 | .378 | .561 |
| 1120 | | | | | | | | | 040 | .455 | .410 | .001 |
| 1140 | | | | | | | | | 040 | | | .228 |

TABLE A.82 ROI-NAMUR TO WAKE, KING FISH

1210 GMT 1 NOV.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|--|--------------------|--|-----|-----------|--------------|-----------------|
| 1200 | 139 | | | | | | | 040 | 000 | -.000 | .000 |
| 1220 | 148 | | | | | | | 040 | 000 | -.000 | .000 |
| 1240 | 139 | | | | | | | 040 | 000 | .041 | .000 |
| 1300 | 104 | | | | | | | 040 | 000 | .313 | .625 |
| 1320 | 099 | | | | | | | 040 | 000 | .030 | .001 |
| 1340 | 105 | | | | | | | 040 | 000 | .012 | .000 |
| 1400 | 106 | | | | | | | 040 | 000 | .000 | .000 |
| 1420 | 106 | | | | | | | 040 | .106 | .049 | .147 |
| 1440 | 107 | | | | | | | 040 | 000 | .000 | .000 |
| 1500 | 113 | | | | | | | 040 | 000 | .067 | .133 |
| 1520 | | | | | | | | | | | |
| 1540 | 313 | | | 271-120 | | | | 040 | .553 | .000 | .000 |
| 1600 | 121 | | | | | | | 040 | 000 | .000 | .000 |
| 1620 | 116 | | | | | | | 040 | 000 | .048 | .000 |
| 1640 | 205 | | | 176-110 | | | | 040 | .424 | .090 | .018 |
| 1700 | 200 | | | | | 077-073 179-108 | | 040 | .463 | .204 | .610 |
| 1720 | 099 | | | | | | | 040 | 000 | .079 | .001 |
| 1740 | 097 | | | | | | | 040 | 000 | .227 | .128 |
| 1800 | 100 | | | | | | | 040 | 000 | .029 | .000 |
| 1820 | 107 | | | | | | | 040 | 000 | .020 | .000 |
| 1840 | 119 | | | | | | | 039 | 000 | .006 | .013 |
| 1900 | 145 | | | | | | | 039 | 000 | .021 | .038 |
| 1920 | 173 | | | | | | | 042 | 000 | .006 | .018 |
| 1940 | 195 | | | | | | | 042 | 000 | .000 | .000 |
| 2000 | 183 | | | | | | | 040 | 000 | .000 | .000 |
| 2020 | 167 | | | | | | | 040 | .021 | .000 | .000 |
| 2040 | 150 | | | | | | | 040 | 000 | .000 | .000 |
| 2100 | 157 | | | | | | | 041 | 000 | .004 | .013 |
| 2120 | 155 | | | | | | | 047 | 000 | .000 | .000 |
| 2140 | 169 | | | | | | | 046 | 000 | .000 | .000 |
| 2200 | 166 | | | | | | | 046 | .124 | .000 | .000 |
| 2220 | 171 | | | | | | | 046 | 000 | .000 | .000 |
| 2240 | 172 | | | | | 069-067 079-066 | | 049 | 000 | .000 | .000 |
| 2300 | 165 | | | | | | | 049 | .138 | .000 | .000 |
| 2320 | 167 | | | | | | | 042 | 000 | .000 | .000 |
| 2340 | 167 | | | | | | | 052 | .061 | .000 | .000 |
| | | | | | | | | 042 | 000 | .006 | .000 |

TABLE A.82 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|---------|--|-----|-----------|--------------|-----------------|
| 0000 | 164 | | | | | | | 079 | 000 | .006 | .000 |
| 0020 | 160 | | | | | | | 040 | 000 | .000 | .000 |
| 0040 | 157 | | | | | | | 041 | 000 | .000 | .000 |
| 0100 | 157 | | | | | | | 040 | 000 | .000 | .000 |
| 0120 | 156 | | | | | | | 039 | 000 | .000 | .000 |
| 0140 | 159 | | | | | | | 040 | 000 | .000 | .000 |
| 0200 | 122 | | | | | | | 039 | 000 | .000 | .000 |
| 0220 | 164 | | | | | | | 040 | 000 | .000 | .000 |
| 0240 | 168 | | | | | | | 040 | 000 | .000 | .000 |
| 0300 | 174 | | | | | | | 040 | 000 | .000 | .000 |
| 0320 | 183 | | | | | | | 040 | 000 | .000 | .000 |
| 0340 | 201 | | | | | | | 040 | 000 | .000 | .000 |
| 0400 | 201 | | | | | | | 040 | 000 | .000 | .000 |
| 0420 | 216 | | | | | | | 040 | 000 | .000 | .000 |
| 0440 | 238 | | | | | | | 040 | 000 | .000 | .000 |
| 0500 | 256 | | | | | | | 040 | 000 | .000 | .000 |
| 0520 | 274 | | | | | | | 040 | 000 | .000 | .000 |
| 0540 | 263 | | | | | | | 040 | 000 | .141 | .424 |
| 0600 | 256 | | | | | | | 040 | 000 | .000 | .000 |
| 0620 | 307 | | | | | | | 040 | 000 | .000 | .000 |
| 0640 | 461 | | | | | | | 040 | 000 | .000 | .000 |
| 0700 | 332 | | | | | | | 040 | 000 | .000 | .000 |
| 0720 | 364 | | | | | | | 040 | 000 | .015 | .044 |
| 0740 | 299 | | | | | | | 000 | 000 | .000 | .000 |
| 0800 | 279 | | | | | | | 000 | 000 | .000 | .000 |
| 0820 | 201 | | | | | | | 040 | 000 | .000 | .000 |
| 0840 | 227 | | | | | | | 040 | 000 | .000 | .000 |
| 0900 | 158 | | | | | | | 040 | 000 | .009 | .046 |
| 0920 | 152 | | | | | | | 040 | 000 | .000 | .000 |
| 0940 | 249 | | | | | | | 040 | 000 | .033 | .041 |
| 1000 | 191 | | | | | | | 040 | 000 | .000 | .000 |
| 1020 | 218 | | | | | | | 040 | 000 | .000 | .000 |
| 1040 | | | | | | 185-144 | | 040 | .230 | .000 | .000 |
| 1100 | 151 | | | | | | | 040 | 000 | .000 | .000 |
| 1120 | 157 | | | | | | | 040 | 000 | .000 | .000 |
| 1140 | 152 | | | | | | | 040 | 000 | .000 | .000 |

TABLE A.83 ROI-NAMUR TO FAIRBANKS, KING FISH

1210 GMT 1 NOV.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|---------|-----|-----|-----------|--------------|-----------------|
| 1200 | 159 | | | | | | | 040 | 000 | .000 | .000 | |
| 1220 | 160 | | | | | | | 040 | 000 | .000 | .000 | |
| 1240 | 148 | | | | | | | 040 | 000 | .000 | .000 | |
| 1300 | 126 | | | | | | | 040 | 000 | .000 | .000 | |
| 1320 | 121 | | | | | | | 040 | 000 | .000 | .000 | |
| 1340 | 138 | | | | | | | 040 | 000 | .000 | .000 | |
| 1400 | 134 | | | | | | | 040 | 000 | .000 | .000 | |
| 1420 | 139 | | | | | | | 040 | 000 | .000 | .000 | |
| 1440 | | | | | | | | 040 | 000 | .000 | .000 | |
| 1500 | 139 | | | | | | | 040 | 000 | .000 | .000 | |
| 1520 | 147 | | | | | | | 040 | 000 | .000 | .000 | |
| 1540 | 136 | | | | | | | 040 | 000 | .000 | .000 | |
| 1600 | 152 | | | | | | | 040 | 000 | .000 | .000 | |
| 1620 | | | | | | | | 040 | 000 | .000 | .000 | |
| 1640 | 145 | | | | | | | 040 | 000 | .000 | .000 | |
| 1700 | 137 | | | | | | | 040 | 000 | .000 | .000 | |
| 1720 | 129 | | | | | | | 040 | 000 | .000 | .000 | |
| 1740 | 134 | | | | | | | 040 | 000 | .000 | .000 | |
| 1800 | 131 | | | | | | | 040 | 000 | .000 | .000 | |
| 1820 | 147 | | | | | | | 040 | 000 | .000 | .000 | |
| 1840 | 181 | | | | | | | 057 | 000 | .000 | .000 | |
| 1900 | 211 | | | | | | | 072 | 000 | .000 | .000 | |
| 1920 | 240 | | | | | | | 084 | 000 | .000 | .000 | |
| 1940 | 254 | | | | | | | 095 | 000 | .000 | .000 | |
| 2000 | 274 | | | | | | | 095 | 000 | .000 | .000 | |
| 2020 | 272 | | | | | | | 103 | 000 | .000 | .000 | |
| 2040 | 268 | | | | | | | 106 | 000 | .000 | .000 | |
| 2100 | 245 | | | | | | | 114 | 000 | .000 | .000 | |
| 2120 | | | | | | | | 126 | 000 | .000 | .000 | |
| 2140 | 300 | | | | | | | 127 | 000 | .040 | .091 | |
| 2200 | 314 | | | | | | 298-250 | 128 | 000 | .000 | .000 | |
| 2220 | 318 | | | | | | 293-237 | 127 | 000 | .000 | .000 | |
| 2240 | 236 | | | | | | | 188 | 000 | .000 | .000 | |
| 2300 | 231 | | | | | | | 138 | 000 | .044 | .132 | |
| 2320 | 242 | | | | | | | 124 | 000 | .000 | .000 | |
| 2340 | 248 | | | | | | | 121 | 000 | .000 | .000 | |

TABLE A.83 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0000 | 264 | | | | | | | 142 | 000 | .027 | .082 |
| 0020 | 285 | | | | | | | 129 | 000 | .000 | .000 |
| 0040 | 301 | | | | | | | 111 | 000 | .156 | .156 |
| 0100 | 279 | | | | | | | 106 | 000 | .000 | .000 |
| 0120 | 282 | | | | | | | 104 | 000 | .000 | .000 |
| 0140 | 277 | | | | | | | 109 | 000 | .000 | .000 |
| 0200 | 268 | | | | | | | 115 | 000 | .000 | .000 |
| 0220 | 241 | | | | | | | 109 | 000 | .000 | .000 |
| 0240 | 235 | | | | | | | 105 | 000 | .000 | .000 |
| 0300 | 239 | | | | | | | 102 | 000 | .000 | .000 |
| 0320 | 224 | | | | | | | 106 | 000 | .000 | .000 |
| 0340 | 185 | | | | | | | 103 | 000 | .000 | .000 |
| 0400 | 188 | | | | | | | 099 | 000 | .000 | .000 |
| 0420 | | | | | | | | | | | .197 |
| 0440 | | | | | | | | | | | .000 |
| 0500 | | | | | | | | | | | .000 |
| 0520 | | | | | | | | | | | .000 |
| 0540 | | | | | | | | | | | .000 |
| 0600 | | | | | | | | | | | .000 |
| 0620 | | | | | | | | | | | .000 |
| 0640 | | | | | | | | | | | .000 |
| 0700 | 110 | | | | | | | 040 | 000 | .044 | .000 |
| 0720 | 109 | | | | | | | 041 | 000 | .000 | .000 |
| 0740 | 109 | | | | | | | 043 | 000 | .000 | .000 |
| 0800 | 087 | | | | | | | 043 | 000 | .000 | .000 |
| 0820 | | | | | | | | | | | .000 |
| 0840 | 078 | | | | | | | 040 | 000 | .000 | .000 |
| 0900 | 090 | | | | | | | 040 | 000 | .000 | .000 |
| 0920 | 088 | | | | | | | 040 | 000 | .000 | .000 |
| 0940 | 094 | | | | | | | 040 | 000 | .000 | .000 |
| 1000 | | | | | | | | | | | .000 |
| 1020 | 093 | | | | | | | 040 | 000 | .000 | .000 |
| 1040 | 121 | | | | | | | 040 | 000 | .000 | .000 |
| 1100 | 131 | | | | | | | 040 | 000 | .000 | .000 |
| 1120 | 125 | | | | | | | 040 | 000 | .000 | .000 |
| 1140 | 147 | | | | | | | 040 | 000 | .000 | .000 |

TABLE A.84 KAUAI TO PALO ALTO, KING FISH

1210 GMT 1 NOV.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|--|--|-----|-----------|--------------|-----------------|
| 1200 | | | | | | | | | .000 | |
| 1220 | | | | | | | | | .000 | |
| 1240 | | | | | | | | | .000 | |
| 1300 | | | | | | | | | .115 | |
| 1320 | | | | | | | | | .077 | |
| 1340 | | | | | | | | | .060 | |
| 1400 | 069 | | | | | | 041 | 000 | .051 | |
| 1420 | | | | | | | | | .154 | |
| 1440 | | | | | | | | | .131 | |
| 1500 | | | | | | | | | .087 | |
| 1520 | | | | | | | | | .113 | |
| 1540 | | | | | | | | | .000 | |
| 1600 | | | | | | | | | .000 | |
| 1620 | 040 | | | | | | 040 | B | .319 | |
| 1640 | | | | | | | | | .280 | |
| 1700 | | | | | | | | | .000 | |
| 1720 | | | | | | | | | .000 | |
| 1740 | | | | | | | | | .000 | |
| 1800 | 212 | | | 173-158 | | | 118 | .160 | .000 | |
| 1820 | 224 | | | 170-158 | | | 118 | .060 | .056 | |
| 1840 | 228 | | | | | | 119 | .106 | .163 | |
| 1900 | 235 | | | | | | 117 | .000 | .201 | |
| 1920 | | | | | | | 109 | .000 | .223 | |
| 1940 | 238 | | | | | | 095 | .000 | .206 | |
| 2000 | | | | | | | | | .118 | |
| 2020 | | | | | | | | | .000 | |
| 2040 | 234 | | | | | | 118 | .000 | .000 | |
| 2100 | 244 | | | | | | 139 | .000 | .077 | |
| 2120 | 217 | | | | | | 138 | .000 | .000 | |
| 2140 | | | | | | | | | .143 | |
| 2200 | 221 | | | | | | 125 | .000 | .000 | |
| 2220 | 221 | | | | | | 164 | .000 | .149 | |
| 2240 | 272 | | | 262-222 | | | 204 | .000 | .000 | |
| 2300 | 226 | | | | | | 126 | .588 | .000 | |
| 2320 | 246 | | | | | | 142 | .000 | .429 | |
| 2340 | 227 | | | 196-147 | | | 092 | .000 | .176 | |
| | | | | | | | | .363 | .111 | |
| | | | | | | | | .064 | .000 | |

TABLE A.84 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|---------|--|--|--|-----|-----------|--------------|-----------------|
| 0000 | 238 | | | | | | | 102 | 000 | .018 | .000 |
| 0020 | 223 | | | | | | | 137 | 000 | .057 | .133 |
| 0040 | 247 | | | | | | | 091 | 000 | .000 | .000 |
| 0100 | | | | | | | | | | | .097 |
| 0120 | | | | | | | | | | | .219 |
| 0140 | 230 | | | | | | | 067 | .086 | .089 | .286 |
| 0200 | 189 | | | 091-077 | | | | 056 | 000 | .047 | .178 |
| 0220 | | | | | | | | | | | .094 |
| 0240 | | | | | | | | | | | .000 |
| 0300 | 138 | | | | | | | 051 | 000 | .017 | .000 |
| 0320 | | | | | | | | | | | .000 |
| 0340 | 117 | | | | | | | 040 | 000 | .000 | .000 |
| 0400 | 100 | | | | | | | 045 | 000 | .000 | .000 |
| 0420 | 224 | | | | | | | 057 | 000 | .028 | .000 |
| 0440 | 165 | | | | | | | 045 | 000 | .000 | .000 |
| 0500 | 104 | | | 075-070 | | | | 040 | .078 | .000 | .000 |
| 0520 | 097 | | | | | | | 055 | 000 | .049 | .000 |
| 0540 | 092 | | | 084-071 | | | | 040 | .236 | .000 | .000 |
| 0600 | 075 | | | | | | | 040 | 000 | .012 | .037 |
| 0620 | 103 | | | | | | | 040 | 000 | .029 | .000 |
| 0640 | 070 | | | | | | | 043 | 000 | .000 | .000 |
| 0700 | 088 | | | | | | | 047 | 000 | .065 | .000 |
| 0720 | 073 | | | | | | | 040 | 000 | .000 | .000 |
| 0740 | 074 | | | | | | | 040 | 000 | .053 | .160 |
| 0800 | 040 | | | | | | | 040 | B | .015 | .000 |
| 0820 | | | | | | | | | | | .250 |
| 0840 | | | | | | | | | | | .245 |
| 0900 | | | | | | | | | | | .392 |
| 0920 | 088 | | | | | | | 040 | 000 | .019 | .000 |
| 0940 | 072 | | | | | | | 040 | 000 | .078 | .273 |
| 1000 | 089 | | | | | | | 040 | 000 | .030 | .148 |
| 1020 | 074 | | | | | | | 041 | 000 | .056 | .094 |
| 1040 | 084 | | | | | | | 041 | 000 | .078 | .286 |
| 1100 | 071 | | | | | | | 041 | 000 | .125 | .303 |
| 1120 | 077 | | | | | | | 042 | 000 | .000 | .000 |
| 1140 | 075 | | | | | | | 042 | 000 | .025 | .000 |

TABLE A.85 OKINAWA TO TUTUILA, KING FISH

1210 GMT 1 NOV.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 1200 | 158 | | | | | | | 077 | 000 | .116 | .061 |
| 1220 | 237 | | | | | | | 083 | .241 | .202 | .067 |
| 1240 | 232 | | | | | | | 085 | .163 | .439 | .439 |
| 1300 | 235 | | | | | | | 083 | .191 | .311 | .306 |
| 1320 | 192 | | | | | | | 084 | 000 | .259 | .330 |
| 1340 | 186 | | | | | | | 081 | 000 | .368 | .372 |
| 1400 | | | | | | | | | | | .330 |
| 1420 | 135 | | | | | | | 065 | .586 | .306 | .037 |
| 1440 | 130 | | | | | | | 045 | .741 | .284 | .255 |
| 1500 | 132 | | | | | | | 064 | .706 | .145 | .213 |
| 1520 | 135 | | | | | | | 056 | .709 | .253 | .331 |
| 1540 | 142 | | | | | | | 045 | .474 | .252 | .282 |
| 1600 | 132 | | | | | | | 055 | .468 | .227 | .195 |
| 1620 | 131 | | | | | | | 055 | .592 | .450 | .467 |
| 1640 | | | | | | | | | | | .000 |
| 1700 | 102 | | | | | | | 045 | .649 | .040 | .079 |
| 1720 | 098 | | | | | | | 046 | .558 | .468 | .590 |
| 1740 | 127 | | | | | | | 056 | .662 | .316 | .410 |
| 1800 | 101 | | | | | | | 056 | .267 | .280 | .468 |
| 1820 | 139 | | | | | | | 063 | .368 | .110 | .000 |
| 1840 | 155 | | | | | | | 056 | .141 | .270 | .250 |
| 1900 | 136 | | | | | | | 057 | 000 | .311 | .000 |
| 1920 | 107 | | | | | | | 058 | 000 | .310 | .000 |
| 1940 | 103 | | | | | | | 064 | 000 | .184 | .000 |
| 2000 | 077 | | | | | | | 066 | 000 | .000 | .000 |
| 2020 | | | | | | | | | | | .000 |
| 2040 | | | | | | | | | | | .000 |
| 2100 | 153 | | | | | | | 118 | 000 | .360 | .000 |
| 2120 | 220 | | | | | | | 113 | 000 | .049 | .000 |
| 2140 | 240 | | | | | | | 113 | 000 | .054 | .000 |
| 2200 | 289 | | | | | | | 122 | 000 | .028 | .000 |
| 2220 | | | | | | | | | | | .000 |
| 2240 | 299 | | | | | | | 123 | 000 | .000 | .000 |
| 2300 | 297 | | | | | | | 124 | 000 | .000 | .000 |
| 2320 | 306 | | | | | | | 126 | 000 | .000 | .000 |
| 2340 | 310 | | | | | | | 152 | 000 | .113 | .000 |

TABLE A.86 ROI-NAMUR TO HAWAII, TIGHT ROPE

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| | | | | | | | | | | | |
| 0720 | 295 | | | | | | | 040 | 000 | .131 | .000 |
| 0740 | 272 | | | | | | | 040 | .164 | .021 | .052 |
| 0800 | 271 | | | | | | | 040 | .143 | .015 | .000 |
| 0820 | 272 | | | | | | | 040 | 000 | .020 | .000 |
| 0840 | 268 | | | | | | | 041 | 000 | .015 | .000 |
| 0900 | 268 | | | | | | | 040 | .013 | .000 | .000 |
| 0920 | 259 | | | | | | | 043 | 000 | .048 | .000 |
| 0940 | 237 | | | | | | | 044 | 000 | .019 | .000 |
| 1000 | 233 | | | | | | | 040 | 000 | .064 | .000 |
| 1020 | 226 | | | | | | | 044 | 000 | .052 | .000 |
| 1040 | 213 | | | | | | | 040 | 000 | .121 | .000 |
| 1100 | 187 | | | | | | | 040 | 000 | .071 | .000 |
| 1120 | 202 | | | | | | | 041 | 000 | .010 | .000 |
| 1140 | 217 | | | | | | | 041 | 000 | .085 | .000 |
| 1200 | | | | | | | | | | | .000 |
| 1220 | 216 | | | | | | | 040 | 000 | .094 | .000 |
| 1240 | 229 | | | | | | | 041 | 000 | .013 | .000 |
| 1300 | 255 | | | | | | | 040 | 000 | .024 | .000 |
| 1320 | 295 | | | | | | | 045 | 000 | .000 | .000 |
| 1340 | | | | | | | | | | | .000 |
| 1400 | | | | | | | | | | | .000 |
| 1420 | | | | | | | | | | | .000 |
| 1440 | 206 | | | | | | | 041 | 000 | .052 | .000 |
| 1500 | 126 | | | | | | | 041 | 000 | .097 | .028 |
| 1520 | 112 | | | | | | | 041 | 000 | .000 | .000 |
| 1540 | 132 | | | | | | | 041 | 000 | .032 | .000 |
| 1600 | 112 | | | | | | | 040 | .153 | .020 | .020 |
| 1620 | 079 | | | | | | | 040 | 000 | .071 | .143 |
| 1640 | 093 | | | | | | | 041 | 000 | .020 | .040 |
| 1700 | 114 | | | | | | | 040 | 000 | .000 | .000 |
| 1720 | 157 | | | | | | | 040 | 000 | .000 | .000 |
| 1740 | 211 | | | | | | | 040 | .060 | .032 | .064 |
| 1800 | 253 | | | | | | | 040 | .146 | .025 | .024 |
| 1820 | 197 | | | | | | | 042 | .118 | .045 | .060 |
| 1840 | 227 | | | | | | | 044 | 000 | .008 | .000 |
| 1900 | 229 | | | | | | | 042 | 000 | .000 | .000 |

0730 GMT & EDT.

TABLE A.86 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 1920 | 291 | | | | | | | 054 | 000 | .000 | .000 |
| 1940 | 290 | | | | | | | 050 | 000 | .000 | .000 |
| 2000 | 299 | | | | | | | 050 | 000 | .000 | .000 |
| 2020 | 286 | | | | | | | 050 | 000 | .112 | .000 |
| 2040 | | | | | | | | | | | |
| 2100 | 349 | | | | | | | 053 | 000 | .000 | .000 |
| 2120 | 351 | | | | | | | 057 | 000 | .000 | .000 |
| 2140 | 360 | | | | | | | 061 | 000 | .020 | .000 |
| 2200 | 347 | | | | | | | 055 | 000 | .023 | .022 |
| 2220 | | | | | | | | | | | |
| 2240 | 350 | | | | | | | 057 | 000 | .000 | .000 |
| 2300 | 352 | | | | | | | 055 | 000 | .000 | .000 |
| 2320 | 355 | | | | | | | 056 | 000 | .015 | .000 |
| 2340 | 343 | | | | | | | 060 | 000 | .000 | .000 |
| 0000 | 334 | | | | | | | 064 | 000 | .044 | .088 |
| 0020 | 346 | | | | | | | 058 | 000 | .107 | .019 |
| 0040 | 360 | | | | | | | 061 | 000 | .072 | .028 |
| 0100 | 413 | | | | | | | 059 | 000 | .035 | .020 |
| 0120 | 435 | | | | | | | 059 | 000 | .013 | .013 |
| 0140 | 462 | | | | | | | 065 | 000 | .010 | .012 |
| 0200 | 429 | | | | | | | 062 | 000 | .021 | .000 |
| 0220 | 453 | | | | | | | 062 | .148 | .050 | .099 |
| 0240 | 437 | | | | | | | 058 | .021 | .000 | .000 |
| 0300 | | | | | | | | | | | |
| 0320 | 302 | | | | | | | 058 | 000 | .015 | .275 |
| 0340 | 397 | | | | | | | 061 | .161 | .006 | .030 |
| 0400 | 363 | | | | | | | 055 | 000 | .002 | .013 |
| 0420 | 359 | | | | | | | 046 | 000 | .002 | .000 |
| 0440 | 354 | | | | | | | 041 | 000 | .003 | .007 |
| 0500 | 317 | | | | | | | 041 | 000 | .047 | .000 |
| 0520 | 303 | | | | | | | 040 | 000 | .012 | .024 |
| 0540 | 322 | | | | | | | 040 | 000 | .000 | .000 |
| 0600 | 306 | | | | | | | 041 | 000 | .000 | .000 |
| 0620 | 295 | | | | | | | 041 | 000 | .000 | .000 |
| 0640 | | | | | | | | 041 | 000 | .000 | .000 |
| 0700 | 297 | | | | | | | 040 | 000 | .000 | .000 |

TABLE A.87 ROI-NAMUR TO KAUALI, TIGHT ROPE

| TIME | MOF | GAPS IN HF SPECTRUM | LOF | EVENT DAY | 0730 ONE & MOV. | |
|------|-----|---------------------|-----|-----------|-----------------|-----------------|
| | | | | | EMGD AVERAGE | SINGLE EMGD DAY |
| 0720 | 280 | | 039 | 000 | .000 | .000 |
| 0740 | 281 | | 039 | 000 | .044 | .000 |
| 0800 | 278 | | 039 | 000 | .036 | .000 |
| 0820 | 270 | | 039 | 000 | .000 | .000 |
| 0840 | | | | | .000 | .000 |
| 0900 | 253 | | 039 | 000 | .000 | .000 |
| 0920 | | | | | .000 | .000 |
| 0940 | 250 | | 040 | 000 | .000 | .000 |
| 1000 | 251 | | 039 | 000 | .000 | .000 |
| 1020 | 210 | | 039 | 000 | .000 | .000 |
| 1040 | 242 | | 039 | 000 | .000 | .000 |
| 1100 | 154 | | 039 | 000 | .000 | .000 |
| 1120 | 152 | | 039 | 000 | .000 | .000 |
| 1140 | 160 | | 039 | 000 | .000 | .000 |
| 1200 | 166 | | 039 | 000 | .000 | .000 |
| 1220 | 164 | | 039 | 000 | .000 | .000 |
| 1240 | 178 | | 040 | 000 | .000 | .000 |
| 1300 | 210 | | 040 | 000 | .000 | .000 |
| 1320 | 220 | | 040 | 000 | .000 | .000 |
| 1340 | | | 040 | 000 | .000 | .000 |
| 1400 | 260 | | 039 | 000 | .000 | .000 |
| 1420 | 231 | | 040 | 000 | .000 | .000 |
| 1440 | 184 | | 040 | 000 | .000 | .000 |
| 1500 | 140 | | 040 | 000 | .000 | .000 |
| 1520 | 126 | | 040 | 000 | .000 | .000 |
| 1540 | 136 | | 040 | 000 | .000 | .000 |
| 1600 | | | | | .000 | .000 |
| 1620 | 112 | | 040 | 000 | .000 | .000 |
| 1640 | 086 | | 040 | 000 | .000 | .000 |
| 1700 | 096 | | 040 | 000 | .000 | .000 |
| 1720 | 115 | | 040 | 000 | .000 | .000 |
| 1740 | 166 | | 040 | 000 | .000 | .000 |
| 1800 | 226 | | 040 | 000 | .000 | .000 |
| 1820 | 225 | | 040 | 000 | .000 | .000 |
| 1840 | 199 | | 045 | 000 | .000 | .000 |
| 1900 | 208 | 259-233 | 045 | .107 | .000 | .000 |

TABLE A.87 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|-----|-----------|--------------|-----------------|
| 1920 | 280 | | 047 | 000 | .000 | .000 |
| 1940 | 277 | | 053 | 000 | .000 | .000 |
| 2000 | 284 | | 052 | 000 | .000 | .000 |
| 2020 | 295 | | 051 | 000 | .000 | .000 |
| 2040 | | | | | | |
| 2100 | | | | | | |
| 2120 | 364 | | 064 | 000 | .000 | .000 |
| 2140 | 372 | | 068 | 000 | .000 | .000 |
| 2200 | 347 | | 066 | 000 | .005 | .009 |
| 2220 | 327 | | 066 | 003 | .000 | .000 |
| 2240 | 327 | | 066 | 003 | .000 | .000 |
| 2300 | | | | | | |
| 2320 | 324 | | 067 | 000 | .005 | .009 |
| 2340 | 325 | | 069 | 000 | .023 | .023 |
| 0000 | 339 | | 067 | 000 | .000 | .000 |
| 0020 | 339 | 307-269 | 064 | .138 | .000 | .000 |
| 0040 | 361 | 335-272 | 056 | .207 | .000 | .000 |
| 0100 | 388 | | 065 | 000 | .000 | .000 |
| 0120 | 430 | | 063 | 000 | .000 | .000 |
| 0140 | 313 | | 063 | 000 | .000 | .000 |
| 0200 | 328 | | 059 | 000 | .000 | .000 |
| 0220 | 330 | | 061 | 000 | .107 | .107 |
| 0240 | 465 | | 039 | .246 | .009 | .009 |
| 0300 | 431 | 409-304 | 052 | .298 | .000 | .000 |
| 0320 | 402 | 396-287 | 054 | .164 | .000 | .000 |
| 0340 | 340 | 334-277 | 048 | .361 | .000 | .000 |
| 0400 | 346 | 312-207 | 048 | .154 | .028 | .055 |
| 0420 | 329 | 291-245 | 041 | 000 | .127 | .254 |
| 0440 | 376 | | 041 | 000 | .056 | .000 |
| 0500 | 348 | 303-256 | 040 | .153 | .063 | .000 |
| 0520 | 255 | | 040 | 000 | .109 | .000 |
| 0540 | 265 | | 040 | 000 | .112 | .000 |
| 0600 | 252 | | 040 | 000 | .051 | .000 |
| 0620 | 232 | | 040 | 000 | .000 | .000 |
| 0640 | 229 | | 040 | 000 | .042 | .000 |
| 0700 | 216 | | 040 | 000 | .014 | .043 |

TABLE A.88 CANTON TO MIDWAY, TIGHT ROPE

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|---------|---------|---------|---------|---------|---------|-----|------|------|-----------|--------------|-----------------|
| | | 158-139 | 125-112 | 169-131 | 110-078 | 097-091 | 081-073 | 063-061 | 050-044 | 040 | | | | | |
| 0720 | 172 | | | | | 097-091 | 081-073 | 063-061 | 050-044 | 040 | .106 | .176 | .000 | | |
| 0740 | 180 | | | | | 095-090 | 084-076 | | | 040 | .379 | .221 | .000 | | |
| 0800 | 132 | | | | | 124-080 | 062-060 | | | 052 | .575 | .307 | .000 | | |
| 0820 | 221 | | | | | 085-079 | 064-061 | | | 043 | .399 | .259 | .000 | | |
| 0840 | 277 | | | | | | | | | 048 | .000 | .265 | .396 | | |
| 0900 | 134 | | | | | 110-078 | 076-074 | | | 041 | .462 | .439 | .000 | | |
| 0920 | 241 | | | | | 111-077 | | | | 041 | .555 | .503 | .000 | | |
| 0940 | 151 | | | | | 144-078 | 074-071 | | | 042 | .734 | .588 | .000 | | |
| 1000 | 129 | | | | | 124-091 | 085-072 | | | 040 | .663 | .569 | .486 | | |
| 1020 | 232 | | | | | 121-099 | 093-090 | | | 040 | .594 | .478 | .000 | | |
| 1040 | | | | | | | | | | | | | .000 | | |
| 1100 | 208 | | | | | | | | | | | | .261 | | |
| 1120 | 183 | | | | | 094-091 | 084-068 | | | 040 | .417 | .412 | .664 | | |
| 1140 | 214 | | | | | 094-091 | 083-074 | | | 049 | .328 | .363 | .528 | | |
| 1200 | | | | | | | | | | 040 | .201 | .400 | .001 | | |
| 1220 | 139 | | | | | | | | | | | | .816 | | |
| 1240 | 120 | | | | | 099-092 | 082-078 | | | 048 | .176 | .445 | .562 | | |
| 1300 | 128 | | | | | 096-091 | 072-069 | | | 050 | .114 | .669 | .001 | | |
| 1320 | 231 | | | | | 104-094 | 083-075 | | | 052 | .263 | .250 | .605 | | |
| 1340 | 133 | | | | | 102-093 | 072-070 | | | 049 | .154 | .285 | .365 | | |
| 1400 | 092 | | | | | 144-138 | 072-068 | | | 053 | .338 | .510 | .604 | | |
| 1420 | | | | | | 124-116 | 075-073 | | | 064 | .250 | .526 | .001 | | |
| 1440 | 091 | | | | | | | | | | | | .029 | | |
| 1500 | 142 | | | | | 082-070 | 081-078 | | | 063 | .429 | .469 | .034 | | |
| 1520 | 131 | | | | | 128-094 | 062-060 | | | 055 | .425 | .531 | .357 | | |
| 1540 | 108 | | | | | | | | | 048 | .024 | .101 | .202 | | |
| 1600 | 099 | | | | | 072-077 | | | | 054 | .111 | .388 | .388 | | |
| 1620 | 090 | | | | | 084-070 | | | | 049 | .420 | .282 | .370 | | |
| 1640 | 091 | | | | | 085-070 | 086-069 | | | 049 | .512 | .238 | .072 | | |
| 1700 | 070 | | | | | | | | | 053 | .605 | .351 | .086 | | |
| 1720 | 091 | | | | | 071-070 | 065-060 | | | 050 | .350 | .156 | .000 | | |
| 1740 | 120 | | | | | 076-070 | | | | 054 | .378 | .000 | .000 | | |
| 1800 | 158 | | | | | | | | | 056 | .062 | .062 | .062 | | |
| 1820 | 250 | | | | | | | | | 064 | .000 | .322 | .036 | | |
| 1840 | | | | | | | | | | 087 | .202 | .202 | .055 | | |
| 1900 | 281 | | | | | | | | | 098 | .040 | .040 | .099 | | |

0730 GRET & NOV.

TABLE A.89 ROI-NAMUR TO HAWAII, HOUSATONIC

1601 OCT 30 OCT.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|--|--|---------|--|-----|-----------|--------------|-----------------|
| 160 | 125 | | | | | | | 040 | .282 | .055 | .053 |
| 1620 | 114 | | | | | | | 040 | .257 | .270 | .313 |
| 1640 | 104 | | | | | | | 041 | .159 | .248 | .281 |
| 1700 | 104 | | | | | | | 041 | .000 | .146 | .225 |
| 1740 | 095 | | | | | | | 041 | .000 | .058 | .115 |
| 1800 | 154 | | | | | | | 044 | .000 | .060 | .000 |
| 1820 | 175 | | | | | | | 054 | .040 | .129 | .015 |
| 1840 | 196 | | | | | | | 050 | .000 | .022 | .000 |
| 1900 | 244 | | | | | | | 053 | .000 | .000 | .000 |
| 1920 | 246 | | | | | | | 052 | .000 | .000 | .000 |
| 1940 | 252 | | | | | | | 054 | .000 | .000 | .000 |
| 2000 | 288 | | | | | | | 061 | .000 | .037 | .006 |
| 2020 | 309 | | | | | | | 058 | .000 | .005 | .000 |
| 2040 | 321 | | | | | | | 056 | .000 | .147 | .000 |
| 2100 | 322 | | | | | | | 052 | .000 | .024 | .000 |
| 2120 | 325 | | | | | | | 054 | .000 | .055 | .000 |
| 2140 | 318 | | | | | | | 051 | .000 | .000 | .000 |
| 2200 | 330 | | | | | | | 055 | .000 | .009 | .000 |
| 2220 | 336 | | | | | | | 061 | .000 | .023 | .000 |
| 2240 | | | | | | | | 058 | .000 | .008 | .017 |
| 2300 | | | | | | | | | | .000 | .000 |
| 2320 | | | | | | | | | | .027 | .000 |
| 2340 | 367 | | 128-120 | | | | | 055 | .035 | .046 | .138 |
| 0000 | 367 | | | | | | | | | | .000 |
| 0020 | 378 | | 151-145 | | | | | | | | .000 |
| 0040 | 400 | | | | | | | 051 | .019 | .157 | .228 |
| 0100 | 392 | | 198-174 | | | | | 058 | .022 | .212 | .106 |
| 0120 | 349 | | 160-139 | | | | | 054 | .102 | .152 | .195 |
| 0140 | | | | | | | | 054 | .086 | .073 | .170 |
| 0200 | | | | | | | | 040 | .013 | .025 | .046 |
| 0220 | | | | | | | | | | | .064 |
| 0240 | | | | | | | | | | | .127 |
| 0300 | 320 | | | | | | | 049 | .000 | .197 | .041 |
| 0320 | 383 | | | | | | | 045 | .000 | .199 | .216 |
| 0340 | 072 | | | | | 070-067 | | 040 | .094 | .035 | .321 |
| | | | | | | | | | | | .070 |

TABLE A.89 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 0400 | 385 | | | | | | | 049 | .009 | .187 | .084 |
| 0420 | 394 | | | | | | | 049 | .084 | .115 | .379 |
| 0440 | 379 | | | | | | | 041 | .153 | .344 | .287 |
| 0500 | 356 | | | | | | | 040 | .000 | .000 | .000 |
| 0520 | | | | | | | | | | | .000 |
| 0540 | | | | | | | | | | | .000 |
| 0600 | 328 | | | | | | | 040 | .146 | .004 | .000 |
| 0620 | 340 | | | | | | | 040 | .173 | .008 | .000 |
| 0640 | 313 | | | | | | | 040 | .000 | .011 | .033 |
| 0700 | 204 | | | | | | | 040 | .000 | .044 | .088 |
| 0720 | 197 | | | | | | | 040 | .000 | .036 | .108 |
| 0740 | 234 | | | | | | | 040 | .000 | .012 | .022 |
| 0800 | 221 | | | | | | | 040 | .000 | .041 | .000 |
| 0820 | 273 | | | | | | | 040 | .000 | .048 | .000 |
| 0840 | 253 | | | | | | | 040 | .000 | .120 | .000 |
| 0900 | 232 | | | | | | | 040 | .000 | .086 | .000 |
| 0920 | 225 | | | | | | | 040 | .092 | .197 | .180 |
| 0940 | 217 | | | | | | | 040 | .000 | .147 | .000 |
| 1000 | 236 | | | | | | | 040 | .000 | .266 | .308 |
| 1020 | 248 | | | | | | | 040 | .014 | .307 | .298 |
| 1040 | 237 | | | | | | | 040 | .020 | .140 | .000 |
| 1100 | 266 | | | | | | | 040 | .080 | .136 | .000 |
| 1120 | 237 | | | | | | | 040 | .198 | .144 | .145 |
| 1140 | 229 | | | | | | | 040 | .069 | .138 | .154 |
| 1200 | 214 | | | | | | | 041 | .023 | .184 | .000 |
| 1220 | 180 | | | | | | | 040 | .000 | .110 | .185 |
| 1240 | 195 | | | | | | | 040 | .000 | .150 | .389 |
| 1300 | 187 | | | | | | | 040 | .000 | .188 | .345 |
| 1320 | 177 | | | | | | | 041 | .000 | .150 | .000 |
| 1340 | 172 | | | | | | | 041 | .022 | .360 | .000 |
| 1400 | 184 | | | | | | | 040 | .076 | .447 | .000 |
| 1420 | 174 | | | | | | | 040 | .160 | .203 | .000 |
| 1440 | | | | | | | | 041 | .211 | .194 | .000 |
| 1500 | 108 | | | | | | | 043 | .046 | .435 | .000 |
| 1520 | 133 | | | | | | | 041 | .239 | .289 | .000 |
| 1540 | 116 | | | | | | | 040 | .158 | .277 | .000 |

TABLE A.90 ROL-NAMUR TO KAUI, HOUSATONIC

1601 GMT 30 OCT.

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----------|--------------|-----------------|
| 1600 | 123 | | | | | | | 040 | 000 | .000 | .000 |
| 1620 | 124 | | | | | | | 040 | 000 | .000 | .000 |
| 1640 | 113 | | | | | | | 040 | 000 | .000 | .000 |
| 1700 | 144 | | | | | | | 041 | 000 | .000 | .000 |
| 1720 | 176 | | | | | | | 041 | 000 | .000 | .000 |
| 1740 | 187 | | | | | | | 040 | 000 | .000 | .000 |
| 1800 | 090 | | | | | | | 040 | 000 | .000 | .000 |
| 1820 | 210 | | | | | | | 040 | 000 | .000 | .000 |
| 1840 | 202 | | | | | | | 040 | 000 | .000 | .000 |
| 1900 | 223 | | | | | | | 040 | 000 | .000 | .000 |
| 1920 | 223 | | | | | | | 045 | 000 | .000 | .000 |
| 1940 | 249 | | | | | | | 046 | 000 | .000 | .000 |
| 2000 | 277 | | | | | | | 045 | 000 | .000 | .000 |
| 2020 | | | | | | | | 045 | 000 | .000 | .000 |
| 2040 | | | | | | | | | | | |
| 2100 | 318 | | | | | | | 052 | 000 | .000 | .000 |
| 2120 | 330 | | | | | | | 054 | 000 | .000 | .000 |
| 2140 | 317 | | | | | | | 051 | .036 | .000 | .000 |
| 2200 | 313 | | | | | | | 057 | .007 | .000 | .000 |
| 2220 | 335 | | | | | | | 059 | .000 | .000 | .000 |
| 2240 | 329 | | | | | | | 055 | .000 | .000 | .000 |
| 2300 | | | | | | | | | .026 | .000 | .000 |
| 2320 | | | | | | | | | | .000 | .000 |
| 2340 | | | | | | | | | | .000 | .000 |
| 0000 | 335 | | | | | | | 051 | .000 | .000 | .000 |
| 0020 | 345 | | | | | | | 057 | .000 | .000 | .000 |
| 0040 | 366 | | | | | | | 053 | .027 | .000 | .000 |
| 0100 | 355 | | | | | | | 054 | .000 | .000 | .000 |
| 0120 | 366 | | | | | | | 051 | .024 | .000 | .000 |
| 0140 | 377 | | | | | | | 049 | .000 | .000 | .000 |
| 0200 | 391 | | | | | | | 049 | .000 | .000 | .000 |
| 0220 | 407 | | | | | | | 051 | .003 | .000 | .000 |
| 0240 | 389 | | | | | | | 043 | .000 | .000 | .000 |
| 0300 | 361 | | | | | | | 043 | .000 | .000 | .000 |
| 0320 | 348 | | | | | | | 042 | .000 | .000 | .000 |
| 0340 | 385 | | | | | | | 040 | .000 | .000 | .000 |

TABLE A.90 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|--|--|--|--|--|-----|-----|-----------|--------------|-----------------|
| 0400 | 410 | | | | | | | 040 | 000 | .000 | .000 | |
| 0420 | 433 | | | | | | | 040 | 000 | .000 | .000 | |
| 0440 | 415 | | | | | | | 041 | 000 | .000 | .000 | |
| 0500 | | | | | | | | | | | | |
| 0520 | | | | | | | | | | | | |
| 0540 | 311 | | | | | | | 040 | 000 | .000 | .000 | |
| 0600 | 319 | | | | | | | 040 | 000 | .000 | .000 | |
| 0620 | | | | | | | | | | | | |
| 0640 | | | | | | | | | | | | |
| 0700 | | | | | | | | | | | | |
| 0720 | 313 | | | | | | | 040 | 000 | .000 | .000 | |
| 0740 | 317 | | | | | | | 040 | 000 | .000 | .000 | |
| 0760 | 294 | | | | | | | 040 | 000 | .000 | .000 | |
| 0800 | 283 | | | | | | | 040 | 000 | .000 | .000 | |
| 0820 | | | | | | | | | | | | |
| 0840 | 261 | | | | | | | 041 | 000 | .000 | .000 | |
| 0900 | 251 | | | | | | | 040 | 000 | .000 | .000 | |
| 0920 | 257 | | | | | | | 041 | 000 | .000 | .000 | |
| 0940 | 256 | | | | | | | 040 | 000 | .000 | .000 | |
| 1000 | 240 | | | | | | | 041 | 000 | .000 | .000 | |
| 1020 | 215 | | | | | | | 040 | 000 | .000 | .000 | |
| 1040 | | | | | | | | | | | | |
| 1100 | | | | | | | | | | | | |
| 1120 | 220 | | | | | | | 040 | 000 | .050 | .000 | |
| 1140 | 203 | | | | | | | 041 | 000 | .021 | .000 | |
| 1200 | 225 | | | | | | | 040 | 000 | .000 | .000 | |
| 1220 | 227 | | | | | | | 040 | 000 | .000 | .000 | |
| 1240 | 216 | | | | | | | 041 | 000 | .000 | .000 | |
| 1300 | 199 | | | | | | | 041 | 000 | .000 | .000 | |
| 1320 | 187 | | | | | | | 041 | 000 | .000 | .000 | |
| 1340 | 188 | | | | | | | 040 | 000 | .000 | .000 | |
| 1400 | 170 | | | | | | | 040 | 000 | .000 | .000 | |
| 1420 | 169 | | | | | | | 040 | 000 | .000 | .000 | |
| 1440 | 173 | | | | | | | 041 | 000 | .000 | .000 | |
| 1500 | 184 | | | | | | | 041 | 000 | .000 | .000 | |
| 1520 | 176 | | | | | | | 041 | 000 | .000 | .000 | |
| 1540 | 175 | | | | | | | 041 | 000 | .000 | .000 | |

TABLE A.91 CANTON TO MIDWAY, HOUSATONIC

| TIME | MOF | GAPS IN HF SPECTRUM | | | | LOF | EVENT DAY | ENKGD AVERAGE | SINGLE ENKGD DAY |
|------|-----|---------------------|--|--|--|-----|-----------|---------------|------------------|
| 1600 | 117 | | | | | 047 | .314 | .220 | .172 |
| 1620 | 124 | | | | | 053 | .479 | .398 | .000 |
| 1640 | 117 | | | | | 052 | .292 | .417 | .235 |
| 1700 | 093 | | | | | 053 | .425 | .480 | .272 |
| 1720 | 091 | | | | | 052 | .231 | .299 | .044 |
| 1740 | 131 | | | | | 053 | .282 | .353 | .333 |
| 1800 | | | | | | | | | .056 |
| 1820 | 184 | | | | | 063 | .041 | .182 | .075 |
| 1840 | 199 | | | | | 063 | .103 | .153 | .100 |
| 1900 | 214 | | | | | 086 | .000 | .095 | .108 |
| 1920 | 235 | | | | | 086 | .000 | .106 | .090 |
| 1940 | | | | | | | | | .138 |
| 2000 | 258 | | | | | 104 | .000 | .096 | .043 |
| 2020 | 267 | | | | | 104 | .000 | .074 | .066 |
| 2040 | 269 | | | | | 097 | .060 | .029 | .000 |
| 2100 | 272 | | | | | 101 | .053 | .039 | .101 |
| 2120 | 286 | | | | | 096 | .053 | .080 | .079 |
| 2140 | 292 | | | | | 101 | .042 | .006 | .000 |
| 2200 | 298 | | | | | 093 | .000 | .064 | .101 |
| 2220 | 268 | | | | | 085 | .191 | .094 | .238 |
| 2240 | 274 | | | | | 083 | .120 | .224 | .198 |
| 2300 | | | | | | | | | .079 |
| 2320 | 321 | | | | | 101 | .136 | .083 | .067 |
| 2340 | 334 | | | | | 105 | .000 | .079 | .023 |
| 0000 | 365 | | | | | 117 | .028 | .050 | .084 |
| 0020 | 379 | | | | | 116 | .000 | .079 | .169 |
| 0100 | 319 | | | | | 113 | .228 | .057 | .118 |
| 0120 | 397 | | | | | 087 | .187 | .023 | .067 |
| 0140 | 269 | | | | | 072 | .127 | .000 | .000 |
| 0200 | | | | | | | | | .000 |
| 0220 | 249 | | | | | 061 | .000 | .000 | .000 |
| 0240 | 258 | | | | | 053 | .024 | .000 | .000 |
| 0300 | 274 | | | | | 084 | .024 | .000 | .000 |
| 0320 | 271 | | | | | 047 | .080 | .000 | .000 |
| 0340 | | | | | | | | | .000 |

TABLE A.91 CONTINUED

| TIME | MOF | GAPS IN HF SPECTRUM | | | | | | | LOF | EVENT DAY | BKGD AVERAGE | SINGLE BKGD DAY |
|------|-----|---------------------|---------|---------|---------|---------|---------|---------|-----|-----------|--------------|-----------------|
| 0400 | 256 | | | | 073-071 | | | | 052 | 000 | .000 | .000 |
| 0420 | 262 | | | | | | | | 040 | .036 | .000 | .000 |
| 0440 | 263 | | | | | | | | 040 | .027 | .000 | .000 |
| 0500 | 256 | 190-180 | 166-158 | 074-071 | | | | | 048 | .101 | .000 | .000 |
| 0520 | 224 | 186-150 | 139-130 | | | | | | 040 | .261 | .000 | .000 |
| 0540 | 216 | | | | | | | | 041 | .057 | .000 | .000 |
| 0600 | 207 | 156-149 | | 087-080 | | | | | 047 | .045 | .000 | .000 |
| 0620 | 199 | 186-172 | 155-146 | 100-095 | 093-088 | 082-077 | | | 040 | .233 | .031 | .063 |
| 0640 | 144 | | 125-115 | 075-073 | | | | | 041 | .146 | .007 | .014 |
| 0700 | 168 | 159-147 | | 083-073 | | | | | 041 | .189 | .076 | .192 |
| 0720 | 157 | | | 097-090 | | 084-080 | | | 040 | .094 | .009 | .019 |
| 0740 | 164 | | | 084-077 | | 063-060 | | | 041 | .187 | .030 | .061 |
| 0820 | | | | | | | | | | | | .041 |
| 0840 | 158 | | | 083-077 | | | | | 041 | .145 | .105 | .195 |
| 0900 | 251 | 209-199 | 125-117 | 119-108 | 082-079 | 083-079 | 062-060 | 047-044 | | .240 | .106 | .109 |
| 0920 | 152 | | | 082-079 | | | | | 046 | .082 | .319 | .319 |
| 0940 | 134 | | | 083-075 | | | | | 047 | .126 | .061 | .184 |
| 1000 | 226 | | | | | 083-069 | 062-059 | | | .402 | .024 | .000 |
| 1020 | 235 | 192-134 | | 082-078 | | | | | 047 | .420 | .121 | .205 |
| 1040 | 236 | 209-136 | | 083-079 | | 062-060 | | | 047 | .122 | .095 | .122 |
| 1100 | 228 | 185-174 | 155-136 | 083-078 | 063-060 | | | | 051 | .184 | .188 | .295 |
| 1120 | 231 | 185-168 | 155-146 | 087-079 | 063-060 | | | | 047 | .265 | .092 | .000 |
| 1140 | 232 | 169-157 | | 085-079 | | | | | 041 | .121 | .436 | .000 |
| 1200 | 211 | | | 082-078 | | 062-060 | | | 042 | .032 | .200 | .263 |
| 1220 | 201 | | | | | 063-060 | | | 042 | .036 | .229 | .000 |
| 1240 | 199 | | | | | 063-060 | | | 051 | .020 | .324 | .296 |
| 1300 | 182 | | | | | | | | 052 | .000 | .328 | .000 |
| 1320 | 188 | | | | | 063-061 | | | 048 | .071 | .286 | .286 |
| 1340 | 182 | | | | | | | | 048 | .013 | .432 | .432 |
| 1400 | 182 | | | | | | | | 048 | .000 | .544 | .544 |
| 1420 | 169 | | | | | | | | 051 | .000 | .549 | .549 |
| 1440 | 149 | | | | | | | | 047 | .000 | .348 | .348 |
| 1500 | 156 | | | | | | | | 047 | .000 | .332 | .332 |
| 1520 | 145 | | | | | | | | 048 | .000 | .000 | .000 |
| 1540 | 135 | | | | | | | | 048 | .000 | .531 | .531 |

DISTRIBUTION

Military Distribution Category 62

ARMY ACTIVITIES

- 1 CHIEF OF R & D DA
- 2 AC OF S INTELLIGENCE DA
- 3 CHIEF OF ENGINEERS DA
- 4- 7 ARMY MATERIAL COMMAND
- 8 CHIEF SIGNAL OFFICER DA
- 9- 10 U S ARMY COMBAT DEVELOPMENTS COMMAND
- 11 U S ARMY CDC NUCLEAR GROUP
- 12 U S ARMY ARTILLERY BOARD
- 13 U S ARMY AIR DEFENSE BOARD
- 14 U S ARMY AVIATION BOARD
- 15 U S ARMY COMMAND AND GENERAL STAFF COLLEGE
- 16 U S ARMY AIR DEFENSE SCHOOL
- 17 U S ARMY CDC ARMOR AGENCY
- 18 U S ARMY CDC ARTILLERY AGENCY
- 19 U S ARMY CDC INFANTRY AGENCY
- 20 U S ARMY CDC CBR AGENCY
- 21 U S ARMY SIGNAL SCHOOL
- 22 ARMY MEDICAL RESEARCH LAB
- 23- 24 ENGINEER RESEARCH & DEV LAB
- 25 WATERWAYS EXPERIMENT STATION
- 26 DIAMOND ORDNANCE FUZE LABORATORY
- 27 BALLISTIC RESEARCH LABORATORY
- 28- 30 REDSTONE SCIENTIFIC INFORMATION CENTER
- 31- 32 WHITE SANDS MISSILE RANGE
- 33 U S ARMY MOBILITY COMMAND
- 34 U S ARMY AMMUNITION COMMAND
- 35 ELECTRONICS COMMAND
- 36 U S ARMY ELECTRONIC PROVING GROUND
- 37- 40 U S ARMY ELECTRONIC R & D LABORATORY
- 41- 42 U S ARMY CDC COMBAT SERVICE SUPPORT GROUP
- 43 THE RESEARCH & ANALYSIS CORP
- 44- 45 WHITE SANDS SIGNAL SUPPORT AGENCY
- 46 U S ARMY NUCLEAR DEFENSE LABORATORY
- 47 U S ARMY CDC AIR DEFENSE AGENCY
- 48 UNITED STATES CONTINENTAL ARMY COMMAND
- 49 U S ARMY CDC COMBINED ARMS GROUP
- 50 US ARMY ENGINEER R&D LABS SMOFH-EP
- 51- 54 US ARMY MATERIAL COMMAND, SANDIA

NAVY ACTIVITIES

- 55- 56 CHIEF OF NAVAL OPERATIONS OPO3EG
- 57 CHIEF OF NAVAL OPERATIONS OP-0985
- 58 CHIEF OF NAVAL OPERATIONS OP-75
- 59 CHIEF OF NAVAL OPERATIONS OP-922G1
- 60 CHIEF OF NAVAL OPERATIONS OP-94
- 61 CHIEF OF NAVAL OPERATIONS OP-922F2
- 62- 63 CHIEF OF NAVAL OPERATIONS CODE 811
- 64- 66 CHIEF BUREAU OF NAVAL WEAPONS DLI-3
- 67 CHIEF BUREAU OF SHIPS CODE 423
- 68 CHIEF BUREAU OF YARDS & DOCKS CODE 74
- 69 DIR. US NAVAL RESEARCH LAB.
- 70- 71 U S NAVAL ORDNANCE LABORATORY
- 72 NAVY ELECTRONICS LABORATORY
- 73 U S NAVAL RADIOLOGICAL DEFENSE LAB
- 74 U S NAVAL CIVIL ENGINEERING LABORATORY
- 75 U S NAVAL SCHOOLS COMMAND U S NAVAL STATION
- 76 U S NAVAL POSTGRADUATE SCHOOL
- 77 AIR DEVELOPMENT SQUADRON 5 VX-5
- 78 U S NAVAL AIR DEVELOPMENT CENTER
- 79 U S NAVAL WEAPONS EVALUATION FACILITY
- 80 U S NAVAL MEDICAL RESEARCH INSTITUTE
- 81 DAVID W TAYLOR MODEL BASIN
- 82- 85 U S MARINE CORPS CODE A03H

AIR FORCE ACTIVITIES

- 86- 88 HQ USAF AFTAC-TD
- 89 HQ USAF AFRNEA
- 90 HQ USAF AFXPDG
- 91 HQ USAF AFCCBB
- 92 HQ USAF AFCEKA
- 93 HQ USAF AFGOA
- 94- 98 HQ USAF AFCIN-3DU1
- 99 RESEARCH & TECHNOLOGY DIV BOLLING AFB
- 100 BALLISTIC SYSTEMS DIVISION
- 101 SPACE SYSTEMS DIVISION SSTDS
- 102 TACTICAL AIR COMMAND
- 103 AIR DEFENSE COMMAND
- 104 AIR FORCE SYSTEMS COMMAND
- 105 AF COMMUNICATIONS SERVICE
- 106 RADC-RAALD, GRIFFISS AFB
- 107 SECOND AIR FORCE
- 108-109 AF CAMBRIDGE RESEARCH CENTER
- 110-112 AFWL WLL-3 KIRTLAND AFB
- 113 SCHOOL OF AVIATION MEDICINE
- 114-116 AERONAUTICAL SYSTEMS DIVISION
- 117-118 USAF PROJECT RAND
- 119 ELECTRONIC SYSTEMS DIV ESAT
- 120 AIR TECHNICAL INTELLIGENCE CENTER
- 121 HQ USAF AFORO
- 122 HQ USAF AFXPDK

OTHER DEPARTMENT OF DEFENSE ACTIVITIES

- 123 DIRECTOR OF DEFENSE RESEARCH AND ENGINEERING
- 124 ASST TO THE SECRETARY OF DEFENSE ATOMIC ENERGY
- 125-126 ADVANCE RESEARCH PROJECT AGENCY
- 127 WEAPONS SYSTEM EVALUATION GROUP
- 128-131 DEFENSE ATOMIC SUPPORT AGENCY
- 132 FIELD COMMAND DASA
- 133 FIELD COMMAND DASA FCTG
- 134-135 FIELD COMMAND DASA FCWT
- 136-137 DEFENSE INTELLIGENCE AGENCY
- 138 DEFENSE COMMUNICATIONS AGENCY
- 139 JOINT TASK FORCE-8
- 140 COMMANDER-IN-CHIEF PACIFIC
- 141 COMMANDER-IN-CHIEF ATLANTIC FLEET
- 142 STRATEGIC AIR COMMAND
- 143 CINCNAD
- 144 DIR. DEFENSE INTELLIGENCE AGENCY
- 145-164 DEFENSE DOCUMENTATION CENTER

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- 170 AMER. SCIENCE GENG CO CAMBRIDGE MASS
- 171 IIT RESEARCH INSTITUTE CHICAGO ILL.
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- 173 AVCO CORP WILMINGTON MASS ATTN TECH. LIBRARY
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- 177 BOEING COMPANY SEATTLE WASHINGTON ATTN TECH LIBRARY

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178 COLLINS RADIO CO. CEDAR RAPIDS IOWA
179 COLUMBIA UNIV ELEC RESEARCH LAB NEW YORK
180 CORNELL AERONAUTICAL LAB INC BUFFALO NY
181 DEFENSE RESEARCH CORP SANTA BARBARA ATTN WEITZ
182 DOUGLAS AIRCRAFT CORP SANTA MONICA CALIF
183 EDGERTON GERMESHAUSEN & GRIER INC BOSTON
184 E H PLESSET ASSOC INC LOS ANGELES ATTN TECH. LIBRARY
185 ELECTRO-OPTICAL SYSTEMS PASADENA CALIF
186 SPERRY RAND CORP LONG ISLAND N Y
187 GEN DYNAMICS ASTRO DIV SAN DIEGO ATTN HAMLIN
188 GEN DYNAMICS ELEC DIV SAN DIEGO ATTN ENGR. LIBRARY
189 GEN DYNAMICS GEN ATOMIC DIV SAN DIEGO ATTN T I S
190 GEN DYNAMICS CORP FT WORTH TEXAS
191 GEN ELEC CO RADIATION EFFECTS OPERATION
192 GEN ELEC CO ADVANCED ELEC CENTER ITHACA N Y
193 GEC TECH MIL PLANNING OPER SANTA BARBARA ATTN DASA
194 SYLVANIA DIV ELEC DEF LAB MT VIEW CALIF
195 GEOPHYSICS CORP OF AMER BEDFORD MASS
196 H R B SINGER INC STATE COLLEGE PA
197 GEC RE-ENTRY SYSTEMS DEPT ATTN TECH. INFO. CENTER
198 HUGHES AIRCRAFT CO CULVER CITY CALIF ATTN HANSCOME
199 INST FOR DEFENSE ANALYSIS WASHINGTON
200 INTER TEL & TELGR CORP NUTLEY N J
201 J HOPKINS UNIV APPL PHYSICS LAB SILVER SPRINGS
202 KAMAN NUCLEAR COLORADO SPRINGS ATTN SHELTON
203 LOCKHEED AIRCRAFT CORP PALO ALTO CALIF ATTN MEYROTT
204 MARTIN MARIETTA CO JEFFERSON COUNTY, COL.
205 MIT, LINCOLN LABORATORY ATTN TECH. LIBRARY
206 MITRE CORP BEDFORD MASS ATTN TECH LIBRARY
207 MT. AUBURN RESEARCH ASSOC., INC.
208 N AMERICAN AVIATION DOWNEY CALIF
209 NORTHROP AIRCRAFT INC HAWTHORN CALIF
210 RCA DEFENSE ELCE PRODUCTS MOORE TOWN ATTN ENGR. LIB
211 RCA DAVID SARNOFF RES CENTER PRINCETON NJ
212 THOMPSON RAND-WOODRIDGE CALIF, ATTN TECH. LIBRARY
213 RAND CORP SANTA MONICA CALIF
214 RAYTHEON CO MISSILE & SPACE DIV BEDFORD MASS
215 REPUBLIC AVIATION NINEOLA N Y
216 SPACE GEN CORP EL MONTE, CALIF
217 SPCE TECH LAB LOS ANGELES CALIF
218 STANFORD RESEARCH INST., ATTN TECH. LIBR.
219 STANFORD RESEARCH INST., ATTN COMMUNICATIONS
220 TECH OPER. INC BURLINGTON MASS ATTN RICHARDS
221 UNIV OF MICHIGAN ANN ARBOR MICH ATTN DAMIRAC LIBR
222 VITRO CORP OF AMERICA WEST ORANGE N J
223 WESTINGHOUSE RESEARCH LAB PITTSBURGH PA
224 WESTINGHOUSE ELEC. CORP. WASH. ATTN. PRYTULA
225 CENTRAL RADIO PROPAGATION LAB. NBS BOULDER ATTN UTLA

ATOMIC ENERGY COMMISSION ACTIVITIES

226-228 AEC WASHINGTON TECH LIBRARY
229-230 LOS ALAMOS SCIENTIFIC LAB
231-235 SANDIA CORPORATION
236-245 LAWRENCE RADIATION LAB LIVERMORE
246-249 NEVADA OPERATIONS OFFICE, LAS VEGAS
250 DTIE OAK RIDGE, MASTER
251-280 DTIE OAK RIDGE SURPLUS

302

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Defense Special Weapons Agency
6801 Telegraph Road
Alexandria, Virginia 22310-3398

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JUN 11 1997

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MEMORANDUM FOR DISTRIBUTION

SUBJECT: Declassification Review of Operation DOMINIC
Test Reports

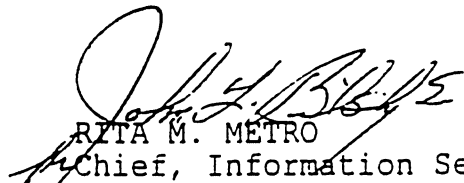
The following 14 reports concerning the atmospheric nuclear tests conducted during Operation DOMINIC in 1962 have been declassified and cleared for open publication/public release:

POR-2011, POR-2016, POR-2017-1, POR-2018 (Vol.3),
POR-2018 (Vol.4), POR-2022, POR-2030 (Vol.2), POR-2031,
POR-2032 (Vol. 7), POR-2035 (Vol.2), POR-2035 (Vol.3),
POR-2036 (Vol.4), POR-2042, and POR-2052.

An additional 28 reports from DOMINIC have been re-issued with deletions and are identified with an "EX" after the report number. These reissued versions are unclassified and approved for open publication. They are:

POR-2000,, POR-2001, POR-2003 thru POR-2005, POR-2007,
POR-2012, POR-2013, POR-2015 (Vol.1&2), POR-2017, POR-2025,
POR-2026, POR-2028 (Vol.3), POR-2032 (Vol.1), POR-2033,
POR-2036 (Vol.2), POR-2036 (Vol.3), POR-2037 (Vol.1), POR-2038,
POR-2040, POR-2041, POR-2043, POR-2046, POR-2051, POR-2053,
POR-2059, and POR-2060.

This notice may be cited as the authority to declassify copies of any of the reports listed in the first paragraph above.


RITA M. METRO
Chief, Information Security