

ROSE ATOLL  
SATELLITE TRACKING 1994-95+

2 of 2

G. BALAZS

808-395-6409

ROSE ATOLL

4805

01092 04805 5 6 D B 1995-01-16 06:03:42 -14.543 191.869 0.000 401650  
 1995-01-16 06:03:19 1 227 07 532 40

04805 Date : 16.01.95 16:08:33 LC : Z IQ : 00  
 Lat1 : ??????? Lon1 : ??????? Lat2 : ??????? Lon2 : ???????

01092 04805 3 6 H  
 1995-01-19 04:22:08 1 226 2114 1798 12

04805 Date : 19.01.95 17:07:45 LC : Z IQ : 00  
 Lat1 : ??????? Lon1 : ??????? Lat2 : ??????? Lon2 : ???????

04805 Date : 21.01.95 15:04:45 LC : 2 IQ : 68  
 Lat1 : 14.570S Lon1 : 168.106W

04805 Date : 22.01.95 18:18:06 LC : B IQ : 00  
 Lat1 : 15.113S Lon1 : 167.150W

04805 Date : 23.01.95 16:19:01 LC : B IQ : 00  
 Lat1 : 14.253S Lon1 : 168.538W Lat2 : 14.913S Lon2 : 165.315W

04805 Date : 23.01.95 19:43:02 LC : B IQ : 00  
 Lat1 : 14.502S Lon1 : 168.144W

04805 Date : 25.01.95 17:35:15 LC : B IQ : 00  
 Lat1 : 14.553S Lon1 : 168.068W

04805 Date : 25.01.95 18:54:39 LC : B IQ : 00  
 Lat1 : 14.585S Lon1 : 168.075W

04805 Date : 26.01.95 17:20:01 LC : Z IQ : 00  
 Lat1 : ??????? Lon1 : ???????

04805 Date : 28.01.95 17:48:58 LC : A IQ : 00  
 Lat1 : 14.517S Lon1 : 167.963W

04805 Date : 29.01.95 17:30:30 LC : 1 IQ : 60  
 Lat1 : 19.519S Lon1 : 145.361W Lat2 : 14.564S Lon2 : 168.145W

04805 Date : 30.01.95 16:31:56 LC : B IQ : 00  
 Lat1 : 14.438S Lon1 : 168.456W

04805 Date : 31.01.95 16:27:42 LC : B IQ : 00  
 Lat1 : 13.626S Lon1 : 169.400W Lat2 : 14.900S Lon2 : 165.509W

04805 Date : 02.02.95 17:41:36 LC : Z IQ : 00  
 Lat1 : ??????? Lon1 : ???????

04805 Date : 03.02.95 17:23:03 LC : 1 IQ : 58  
 Lat1 : 14.556S Lon1 : 168.117W

04805 Date : 03.02.95 19:04:36 LC : A IQ : 07  
 Lat1 : 14.559S Lon1 : 168.113W

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01092 04805 3 6 D  
 1995-02-02 17:41:36 1 227 570 228 92  
 00 00

01092 04805 17 6 D  
 1995-02-03 06:10:12 1 227 20 242 88  
 00 00  
 1995-02-03 06:12:10 2 227 36 242 88  
 00 00  
 1995-02-03 06:13:59 1 227 35 242 88  
 00 01  
 1995-02-03 06:14:44 1 227 35 242 88  
 00 00  
 1995-02-03 06:15:29 1 227 05 242 88  
 00 01  
 1995-02-03 06:16:59 2 227 05 242 88  
 00 00  
 1995-02-03 06:17:44 1 227 05 242 88  
 00 01  
 1995-02-03 06:19:14 2 227 05 242 88  
 00 00

04805 Date : 04.02.95 17:04:36 LC : Z IQ : 00  
 Lat1 : ??????? Lon1 : ????????

04805 Date : 04.02.95 18:46:16 LC : B IQ : 00  
 Lat1 : 14.797S Lon1 : 168.688W

04805 Date : 05.02.95 18:21:15 LC : Z IQ : 00  
 Lat1 : ??????? Lon1 : ????????

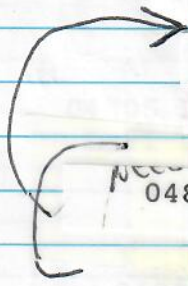
04805 Date : 06.02.95 19:36:14 LC : B IQ : 00  
 Lat1 : 14.506S Lon1 : 168.067W

01092 04805 5 6 D  
 1995-02-09 18:35:25 1 229 1316 814 26  
 00 00  
 1995-02-09 18:36:16 1 229 12 814 26  
 00 01

01092 04805 5 6 D  
 1995-02-15 06:50:47 1 227 191 422 37  
 00 00  
 1995-02-15 06:59:56 1 227 265 422 37  
 00 01

04805 Date : 18.02.95 05:52:51 LC : B IQ : 00  
 Lat1 : 15.338S Lon1 : 166.962W

04805 Date : 15.02.95 06:55:21 LC : B IQ : 00  
 Lat1 : 14.727S Lon1 : 168.087W



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04805 Date : 15.02.95 18:05:22 LC : Z IQ : 00  
Lat1 : ??????? Lon1 : ??????? Lat2 : ??????? Lon2 : ???????  
Nb mes : 001 Nb mes>-120dB : 000 Best level : -129 dB  
Pass duration : ? s NOPC : ?  
Calcul freq : 401 650000.0 Hz Altitude : 0 m  
227 96 275 77  
00 00

04805 Date : 15.02.95 19:44:26 LC : Z IQ : 00  
Lat1 : ??????? Lon1 : ??????? Lat2 : ??????? Lon2 : ???????  
Nb mes : 001 Nb mes>-120dB : 000 Best level : -135 dB  
Pass duration : ? s NOPC : ?  
Calcul freq : 401 650000.0 Hz Altitude : 0 m  
228 160 13658 10846  
01 63

01092 04805 3 6 D  
1995-02-15 18:05:23 1 227 96 275 77  
00 00  
01092 04805 3 6 D  
1995-02-15 19:44:26 1 228 160 13658 10846  
01 63

04805 Date : 18.02.95 05:52:51 LC : B IQ : 00  
Lat1 : 15.338S Lon1 : 166.962W

4805 19.02.95 LC: \_\_\_\_\_  
15.581 N , 166.387 W

04805 Date : 20.02.95 06:46:45 LC : (2) IQ : 50  
Lat1 : 15.581S Lon1 : 166.387W

01092 04805 3 6 D  
1995-02-24 07:06:08 1 227 84 244 88  
00 00

04805 Date : 28.02.95 05:30:46 LC : A IQ : 00  
Lat1 : 16.058S Lon1 : 162.399W

01092 04805 3 6 D  
1995-02-27 18:37:51 1 228 163 154 138  
00 16

04805 Date : 01.03.95 06:54:18 LC : 0 IQ : 50  
Lat1 : 16.092S Lon1 : 161.830W

04805 Date : 02.03.95 06:30:27 LC : (1) IQ : 50  
Lat1 : 16.233S Lon1 : 161.409W

04805 Date : 04.03.95 18:32:01 LC : B IQ : 00  
Lat1 : 16.533S Lon1 : 160.201W

04805 Date : 07.03.95 06:18:06 LC : A IQ : 00  
~~Lat1 : 18.931S Lon1 : 168.870W~~ Lat2 : 16.780S Lon2 : 159.116W

04805 Date : 09.03.95 05:43:13 LC : B IQ : 00  
Lat1 : 17.878S Lon1 : 168.870W

04805 Date : 08.03.95 06:03:03 LC : A IQ : 00  
Lat1 : 17.123S Lon1 : 158.917W Lat2 : 16.979S Lon2 : 158.240W

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4805

04805 Date : 08.03.95 17:05:33 LC : B IQ : 00  
Lat1 : 17.116S Lon1 : 158.287W Lat2 : 20.047S Lon2 : 144.501W

04805 Date : 10.03.95 06:52:30 LC : B IQ : 00  
Lat1 : 17.670S Lon1 : 157.658W Lat2 : 23.897S Lon2 : 173.911E

04805 Date : 12.03.95 06:09:32 LC : 1 IQ : 50  
Lat1 : 17.816S Lon1 : 156.833W Lat2 : 19.963S Lon2 : 166.347W

04805 Date : 13.03.95 16:59:30 LC : B IQ : 00  
Lat1 : 17.805S Lon1 : 156.111W

04805 Date : 14.03.95 07:06:38 LC : 2 IQ : 60  
Lat1 : 17.875S Lon1 : 155.824W

04805 Date : 14.03.95 16:37:17 LC : A IQ : 08  
Lat1 : 17.883S Lon1 : 155.628W

04805 Date : 14.03.95 18:17:06 LC : B IQ : 00  
Lat1 : 17.838S Lon1 : 155.578W

04805 Date : 15.03.95 05:05:33 LC : 1 IQ : 50  
Lat1 : 17.890S Lon1 : 155.333W

04805 Date : 15.03.95 17:52:39 LC : A IQ : 00  
Lat1 : 17.979S Lon1 : 155.027W

04805 Date : 16.03.95 06:24:22 LC : 1 IQ : 50  
Lat1 : 18.104S Lon1 : 154.762W

04805 Date : 16.03.95 17:37:13 LC : B IQ : 00  
Lat1 : 18.061S Lon1 : 154.521W Lat2 : 16.386S Lon2 : 161.943W

04805 Date : 17.03.95 17:07:59 LC : B IQ : 00  
Lat1 : 18.067S Lon1 : 153.997W Lat2 : 18.643S Lon2 : 151.303W

04805 Date : 18.03.95 05:42:48 LC : 0 IQ : 50  
Lat1 : 18.186S Lon1 : 154.642W Lat2 : 17.997S Lon2 : 153.762W

04805 Date : 18.03.95 16:47:03 LC : B IQ : 00  
Lat1 : 17.946S Lon1 : 153.574W Lat2 : 20.586S Lon2 : 141.207W

04805 Date : 19.03.95 06:56:54 LC : A IQ : 00  
Lat1 : 17.935S Lon1 : 153.252W

04805 Date : 19.03.95 18:05:59 LC : B IQ : 00  
Lat1 : 17.877S Lon1 : 153.048W

04805 Date : 20.03.95 06:32:36 LC : B IQ : 00  
Lat1 : 17.830S Lon1 : 152.915W

04805 Date : 10.03.95 18:04:28 LC : B IQ : 00

Lat1 : 17.689S Lon1 : 157.477W

584805

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04805 Date : 20.03.95 17:48:24 LC : B IQ : 00  
Lat1 : 17.685S Lon1 : 152.624W

At Rose on 2/6/95 1936 hours

No positional data until

2/18/95 0552 hours at which time  
she was well to the Southeast of Rose.

SEEN FROM MAIN

While waiting to  
Go ASHORE.

- ONE FEMALE SWIMMING  
PASS - SPOOKED

Made rapid dive when  
Saw the boat.

- Copulating pair -

out pass. Male

mainly pale green, carapace  
with some black streaks  
RADIATIONS in the center

- Male by Copulators

When motoring the island, turtle  
seen floating high inside lagoon  
Dove when we approached.

Friday  
20 OCT. 95

# ROSE VI ATOLL

NARRATIVE

59

Depart Honolulu 5pm Hawaiian Air  
DC-10. 2 dive bags; 1-IGloo Cooler  
1- Black dive bag w/ paravane pole taped on.  
Hand carry "EA Gear" bag, and cooler  
w/ ICOM 735.

Arrive ~ 9:15pm Pago Airport, <sup>gov. rate</sup> ~75 night

11pm #18 taxi to RAINMAKER Room 106

24hr Sea Sick pill ~ 11pm

21 OCT up ~ 7AM

SATURDAY

Capt. Mel <sup>KALITHWAI?</sup> Hawaiian man

Depart Manua tele III ~ 230pm

Smooth Seas

NOT  
LOST  
ONE  
ANCHOR

22 OCT 7AM off Rose. Anchor cable broke

Sunday, waited for slack tide in Awa (Pass)

Went ashore ~ 11am - Holly,  
Marty, BURTEN, Dave Woodside, AILAU

Rain for ~ 2 hours,

Set up tent and paravane.

MIKA  
Cook on  
BOAT = RANALD

10/22/95 5:30pm Buried ONSET STOWAWAY

Sunday

~ 40cm (excavated 10/19 PM)  
from sea park. Excavated 10/25 10pm low

Walked island and counted  
this year's pits and tracks.  
see page 120

Found end pieces of 1993

turtle bob - used  
to make 1995 and as  
4 "ends" were cut (no sides).

Dinner = Pasta w/ RAGU sauce

60

NIGHT (1)

10/22 - 10/23/95

Sunday Monday

See map page 120

9:45 pm Previous 5818 + 3 others - had followed beach rock and attempted to nest where we camped in the early 1980's.

10/23/95 12:05 AM Newly tagged Monday Q202, Q203 CCL = 108 cm LFL RFL

EAST Side Rose Had returned from false nesting and was on bare red flat from low tide HEATED INDENTATION 3-4 IN MARGINAL RIGHT.

5818 gone at 1 AM

4 AM 5818 up again near same area. Turned over by me alone

4:15 am Newly tagged Q204 RFL, Q205 LFL Northwest end - likely false nest CCL = 95.5 cm

10/23/95 6 AM TURNED ON 25692 Name of last years Samoa Miss Means "double lei" Samoa name = ON CASE "LEI" #25692

GMT = +11 hours

1700 23 OCT. 95 GMT

Started attachment process after box initially came apart from turtle moving



old end pieces w/4x4" from 1993

new 4"x4" and new 2" end pieces of plywood - 4"x4" on outside



Oct 1982 Resulted Oct 86 (617 61 added)

10/23/95 Attachment started ~ 6:15 am Monday 6mm skin biopsy taken right hind grain-stream of blood.

Some Black Blotches on yellow plastron Old tags present 5818, 5820, 5821 & 6917 (all in excellent shape - including one thru R2S. 4 1/2 inches

CCL = 113 cm. Steps - 1) ELASTOMER, 2) Fiberglass Hawaii (4 sides) Laminating

3) Fiberglass Hawaii Laminating 1-longways 3-across

4) Fiberglass Hawaii 1-entire across 1-square in front #499 1-across

5) Evercoat Finish (Peter Cray had purchased) - Problem of very slow setting (like late Sept. 95

TDR attachment at Kiholo). Used nearly 1/2 of catalyst tube provided in order for it to set up - and even then it was still tacky.

Light Rain occasionally. Used blue tarp over box. Released turtle at

8:55 am 10/23/95

GMT = 1955 23 OCT 95

10/23/95 ~ 2 PM From Rose Is., cop. PNE Monday seen at surface in blue water of lagoon. Also, a turtle alone at the surface.

Set up longline ~ 25' and Ham radio - WH6WU (Charlie) phonepatch to Jim and worked several stations.

Dinner = Stir fry w/ canned chicken.

NIGHT 2 9:30 PM - 9202 on rubble of NE shore 10/23-10/24/95

10/24 12:30 AM New entrapped - EAST shore, I turned her Tuesday over back under Messerschmitta.

10/24/95  
TUES.

1245am 5818 "leiva" with Transmitter as solid attempting to nest behind Holly's tent  
NOTE - There had to have been 2 other turtles up this night, based on tracks returning to ocean seen late am, low tide. Possibly they were under mess, where difficult to see.

SAT. TRANS. 25693 - Magnet off

10/24/95 6 AM A.S.T. = 1700h 24 OCT 95 GMT

95 STARTED ATTACHMENT,  
6 AM TAGGEDQ20~~0~~RFL, Q20~~0~~LFL; Q20~~0~~LH.  
CC (= 104.5 cm

4 1/2 inches 6mm Biopsies - LH &amp; RH into salt (eggs)

AFTER ELASTOMER - Fiberglass step 1.) - Fiberglass Hawaii laminating; 2.) Fiberglass Hawaii (am. w/ cloth; 3.) Evercoat laminating # 561 + cloth, used twice as many drops as called for (24 per ounce vs 12/oz) and it still would not fall after ~ 15 min. Dripped catalyst onto resin surface and brushed it around. Only 3 coats used - did not use "finish" even though wanted to get turtle into the water ASAP due to dropping tide - released 8:10 AM - Swam to the left (north). Fish name =

Card (white) under all cloth says "ISA LEI" 25693

1910h 24 OCT 95 GMT release

10/24/95 Holly found a single hatchling - TUES. fresh dead - no marks - near shore of N. end. DNA skin samples taken - Packed in Salt (CONTINUED p. 64)

# Rose IV Summary of turtles 63

NIGHT 1

10/22-10/23/95  
Sunday - Monday

Total up and tagged (3 including 1 Recovery)  
108.0  
95.5  
113.0

TAG NUMBERS

Q202-Q203  
Q204, Q205  
5818, 5820, 5821  
917  
Sat. trans. 25692  
"LELUA"

NIGHT 2

10/23-10/24/95 (25692)  
MON. - TUES. 2

(1)

104.5

Q206? (bad destroyed?)

Q207 - Q209  
25693 "ISA LEI"

NIGHT 3

10/24-10/25/95  
Wed. - Thurs. 6  
TOTAL up encountered

Q202-Q203  
Q204, Q205 + (4)

102.0 cm

Q210; Q211  
Q212, Q213

NOT measured  
101.0 cm  
109.5 cm

Q214  
Q215, Q216  
Q217, Q218  
Q219, Q220  
25694 " "

7 newly tagged + one recovery = 8 IDed this encountered TRIP

Holly & Sam in  
 mainly adult cooler H<sub>2</sub>O of lagoon during swarm away quickly. with windows open

10/24/95 BLAZING HOT DAY - 113°F in tent  
 TUES. 100% humidity. Much cooler on opposite (east) side of island due to breeze. Especially in later afternoon when sun hits west side of island

10/24-10/25/95  
 TUES. - wed.  
 NIGHT 3 9 PM Q204-Q205 digging on rubble flats of NE side

10/24 Untagged board excavating under Mess. right near where turtle box was left from yesterday's turtle 25893. I turned her over.

Q202<sup>also</sup> excavating nearby.

9:15 pm at very NW end of island crawling (shell damp)

10/25/95  
 Wed. 12:45 am CCL-102 cm Q210 LFL, Q211 RFL, Q212 LH, Q213 RH.

On Reef Flat of low tide North end - Q214 applied RFL. not measured. I<sup>th</sup> Applied

1 AM Q204 on reef flat N. end.

Q202<sup>also</sup> excavating under Mess. north end. RFL is slightly small and not working correct.  
 Q215 LH, Q216 RH

Means "Religious Group"

TONGAN NAME "AULOTU"

10/25/95  
Wednesday

25694

3 hours on / 3 off -

65

magnet off 6am <sup>AST</sup> 25 OCT 95  
(1700 GMT 25 OCT 95)

Fresh copulations noted  
scabs noted

5:45am started working on turtle.  
note - several (2-3) people necessary to hold turtle and box when she moved so box would burst ~~apart~~ apart - as rotten plywood of ends would break, not fully locked.

43 inches

Q 217 LH, Q 218 RH, Q 219 LFL, Q 220 RFL  
= CEL/09.5 x 106 cm CCW

(Turtle appears deeper than others encountered at Rose).

"AULOTU"  
25694

card =

There was sufficient Elastomer to do this (3rd turtle) but only just enough. If any had been wasted, one bottle for 3 turtles would have been insufficient.

Fiberglass step 1) = Fiberglass Hawaii  
2) Fiberglass Hawaii, 3) Evercoat (minating - Again, slow-slow to harden, even with excessive drops of catalyst, and with F.H. catalyst. ~~was~~ (i.e. had to be a problem with resin, and not catalyst?).

Not finish" coat used - only 3 above.  
Turtle released <sup>AST</sup> at 7:50 AM ~~10/25~~ 10/25 WED  
(1850 GMT, 25 OCT)

photos, including with SPROP sticks on side, taken upon release. Deep water at high tide made departure easy. Like yesterday's turtle, they seemed to be slight tilting forward, as buoyance to posterior. Due to shelled eggs ready to be laid?

25 Oct 95

Wed.

8:30am started taking down  
campsite for departure after 3 nights -  
Holly & Dave indicated their work was  
done with birds/vegetation.

Buried  
15:30  
10/20/95

10 AM dug up onset Temp. Logger  
(in front of tent that was buried  
near 3 (or 2) likely "good" excavations  
in sun.

Departed island at 10:45 AM - I (with woods) was  
last one off. IS. Photo w/ Nikonos -  
Also - of MANUATELE III.

AT about 12 noon we <sup>twice</sup> rotated around the  
atoll, just outside fringing reef. Photo  
Many fish caught of reef & Black  
reef sections

by trawling, including yellow, blue, and  
20 caught. small mackerel, yellowfin tuna, Ahie  
Crew had also caught small bottom  
fish just outside AT (pass).

At 1:30 pm, slack low tide, Holly  
and Marty and Mike retrieved large  
rope (chawser) that had been tied  
to reef on East side of pass (photo  
of them in inflatable).

Departed Atoll about 2:30 PM.

10/26  
Thursday

ARRIVE PAGO 5 am = 14.5 Hr

Very calm seas entire trip.

Backnote - on 10/23 Holly, Marty, Dave walked at  
low tide to Sand IS. Two tracks seen extending  
into island (some "just along shore"). NO pits  
Arrive on 7 AM 10/26

10/27 Visited OMR -

Friday Nancy Dash Sanctuary  
 - Assistant is "PUNI" - from W. Samoa

Backnote - no turtles w/ old transmitters  
 encountered during Rose VI.

Martina <sup>says</sup> FWS agents recently in  
 Pago to pursue endangered  
 wildlife products used for medicine  
 (by Taiwanese).

~~10/27~~ 10/27/95 11 pm depart Pago on  
 Hawaiian Air. -  
 Arrive ~ 5 AM 10/28/95 Sat. Morning

10-22-95	08:10:09	29.88	85.80	41
10-22-95	09:10:09	29.88	85.80	41
10-22-95	10:10:09	29.88	85.80	41
10-22-95	11:10:09	29.88	85.80	41
10-22-95	12:10:09	30.07	86.14	40
10-22-95	13:10:09	30.07	86.14	40
10-22-95	14:10:09	29.88	85.80	41
10-22-95	15:10:09	30.63	87.15	37
10-22-95	16:10:09	31.02	87.84	35
10-22-95	17:10:09	31.21	88.18	34
10-22-95	18:10:09	31.21	88.18	34
10-22-95	19:10:09	30.44	86.81	38
10-22-95	20:10:09	30.63	87.15	37
10-22-95	21:10:09	30.63	87.15	37
10-22-95	22:10:09	30.63	87.15	37
10-22-95	23:10:09	30.63	87.15	37
10-23-95	00:10:09	30.63	87.15	37
10-23-95	01:10:09	30.63	87.15	37
10-23-95	02:10:09	30.63	87.15	37
10-23-95	03:10:09	30.63	87.15	37
10-23-95	04:10:09	30.63	87.15	37
10-23-95	05:10:09	30.63	87.15	37

10-23-95	06:10:09	Temp C	Temp F	AD
10-23-95	07:10:09	30.63	87.15	37
10-23-95	08:10:09	30.63	87.15	37
10-23-95	09:10:09	30.63	87.15	37
10-23-95	10:10:09	30.44	86.81	38
10-23-95	11:10:09	30.44	86.81	38
10-23-95	12:10:09	30.44	86.81	38
10-23-95	13:10:09	30.44	86.81	38
10-23-95	14:10:09	30.26	86.47	39
10-23-95	15:10:09	30.26	86.47	39
10-23-95	16:10:09	30.26	86.47	39
10-23-95	17:10:09	30.26	86.47	39
10-23-95	18:10:09	30.26	86.47	39
10-23-95	19:10:09	30.26	86.47	39
10-23-95	20:10:09	30.26	86.47	39
10-23-95	21:10:09	30.26	86.47	39
10-23-95	22:10:09	30.26	86.47	39
10-23-95	23:10:09	30.26	86.47	39

81002  
01527

10-24-95	00:10:09	30.26	86.47	39
10-24-95	01:10:09	30.26	86.47	39
10-24-95	02:10:09	30.26	86.47	39
10-24-95	03:10:09	30.26	86.47	39
10-24-95	04:10:09	30.26	86.47	39
10-24-95	05:10:09	30.26	86.47	39
10-24-95	06:10:09	30.26	86.47	39
10-24-95	07:10:09	30.26	86.47	39
10-24-95	08:10:09	30.07	86.14	40
10-24-95	09:10:09	30.07	86.14	40
10-24-95	10:10:09	30.07	86.14	40
10-24-95	11:10:09	30.07	86.14	40
10-24-95	12:10:09	30.07	86.14	40
10-24-95	13:10:09	29.88	85.80	41
10-24-95	14:10:09	29.88	85.80	41
10-24-95	15:10:09	29.88	85.80	41
10-24-95	16:10:09	29.88	85.80	41
10-24-95	17:10:09	29.88	85.80	41
10-24-95	18:10:09	29.88	85.80	41
10-24-95	19:10:09	29.88	85.80	41
10-24-95	20:10:09	29.88	85.80	41
10-24-95	21:10:09	30.07	86.14	40
10-24-95	22:10:09	30.07	86.14	40
10-24-95	23:10:09	30.07	86.14	40
10-25-95	00:10:09	30.26	86.47	39
10-25-95	01:10:09	30.26	86.47	39
10-25-95	02:10:09	30.44	86.81	38
10-25-95	03:10:09	30.44	86.81	38
10-25-95	04:10:09	30.44	86.81	38
10-25-95	05:10:09	30.44	86.81	38
10-25-95	06:10:09	30.44	86.81	38
10-25-95	07:10:09	30.44	86.81	38
10-25-95	08:10:09	30.44	86.81	38
10-25-95	09:10:09	30.44	86.81	38
10-25-95	10:10:09	30.44	86.81	38



25692 ASB purchase 3/9 for 39 days  
ST 14 then 3/3

"(6760A)" 69  
12/2/95 switch

departed base  
12/27/95

- ✓ 1 25692 Date : 23.10.95 17:33:31 LC : 1 IQ : 50  
Lat1 : 14.565S Lon1 : 168.116W  
175 00 00 00  
00 00
- ✓ 2 25692 Date : 24.10.95 06:02:01 LC : 2 IQ : 50  
Lat1 : 14.551S Lon1 : 168.160W  
177 49 150 99  
00 00
- 3 25692 Date : 24.10.95 07:45:22 LC : B IQ : 00  
Lat1 : 14.533S Lon1 : 168.254W  
177 236 150 99  
00 00
- ✓ 4 25692 Date : 24.10.95 17:11:50 LC : B IQ : 00  
Lat1 : 14.586S Lon1 : 168.116W  
00 675 75 157  
00 63
- ✓ 5 25692 Date : 25.10.95 05:44:27 LC : A IQ : 00  
Lat1 : 14.477S Lon1 : 168.055W  
177 972 565 35
- ✓ 6 25692 Date : 25.10.95 18:33:17 LC : B IQ : 00  
Lat1 : 14.899S Lon1 : 168.504W  
178 725 445 46  
00 00
- ✓ 7 25692 Date : 26.10.95 05:22:37 LC : A IQ : 00  
Lat1 : 14.424S Lon1 : 167.686W  
178 752 563 36  
00 00
- ✓ 8 25692 Date : 27.10.95 06:40:26 LC : B IQ : 00  
Lat1 : 14.519S Lon1 : 168.331W  
178 702 503 40  
00 00
- ✓ 9 25692 Date : 27.10.95 17:38:29 LC : B IQ : 00  
Lat1 : 14.547S Lon1 : 168.388W  
179 64 394 52  
00 00
- 25692 Date : 29.10.95 07:38:11 LC : B IQ : 00  
Lat1 : 14.462S Lon1 : 168.463W  
179 610 474 41  
00 00
- 25692 Date : 30.10.95 07:08:32 LC : A IQ : 00  
Lat1 : 14.510S Lon1 : 168.050W  
181 05 267 75  
00 01
- 25692 Date : 31.10.95 19:34:45 LC : B IQ : 00  
Lat1 : 14.493S Lon1 : 168.141W  
180 686 374 55  
00 00
- 25692 Date : 02.11.95 07:49:06 LC : B IQ : 00  
Lat1 : 14.572S Lon1 : 168.197W  
179 336 382 35  
03 00

70  
25692

"LEILUA"

25692 Date : 02.11.95 17:13:03 LC : B IQ : 00  
Lat1 : 14.559S Lon1 : 168.142W  
00 455 303 67  
00 52

25692 Date : 03.11.95 18:31:44 LC : 1 IQ : 50  
Lat1 : 14.536S Lon1 : 168.151W  
179 49 220 91  
00 00

25692 Date : 04.11.95 05:23:44 LC : 1 IQ : 58  
Lat1 : 14.549S Lon1 : 168.144W  
178 38 228 86  
00 00

25692 Date : 04.11.95 07:03:22 LC : 3 IQ : 68  
Lat1 : 14.547S Lon1 : 168.151W  
177 38 228 86  
00 00

25692 Date : 04.11.95 18:09:52 LC : 1 IQ : 58  
Lat1 : 14.546S Lon1 : 168.156W  
180 57 18 90  
00 00

25692 Date : 05.11.95 06:38:02 LC : 1 IQ : 60  
Lat1 : 14.545S Lon1 : 168.135W  
175 86 5293 220  
00 00

25692 Date : 07.11.95 05:58:13 LC : 1 IQ : 50  
Lat1 : 14.549S Lon1 : 168.142W  
178 14 312 59  
00 01

25692 Date : 06.11.95 06:20:19 LC : 0 IQ : 58  
Lat1 : 14.497S Lon1 : 168.135W  
178 22 140 121  
00 01

25692 Date : 07.11.95 17:07:48 LC : A IQ : 08  
Lat1 : 14.614S Lon1 : 167.966W  
177 776 97 89  
00 00

25692 Date : 09.11.95 06:55:13 LC : B IQ : 00  
Lat1 : 14.544S Lon1 : 168.150W  
178 823 669 30  
00 00

25692 Date : 12.11.95 17:00:29 LC : 0 IQ : 60  
Lat1 : 14.674S Lon1 : 168.005W  
178 386 435 46  
00 00

25692 Date : 14.11.95 17:51:25 LC : 0 IQ : 50  
Lat1 : 14.558S Lon1 : 168.138W  
179 20 441 46  
00 00

25692 Date : 15.11.95 17:34:37 LC : 0 IQ : 60  
Lat1 : 14.657S Lon1 : 168.075W  
178 711 408 50  
00 00

25692

X 25692 Date : 17.11.95 05:41:35 LC : 0 IQ : 50  
Lat1 : 14.541S Lon1 : 168.119W  
179 847 285 69  
00 00

"CEIWA"

X 25692 Date : 17.11.95 07:22:33 LC : 1 IQ : 58  
Lat1 : 14.577S Lon1 : 168.170W  
179 05 285 69  
00 00

X 25692 Date : 18.11.95 06:59:47 LC : 3 IQ : 60  
Lat1 : 14.548S Lon1 : 168.143W  
170 88 449 44  
00 00

X 25692 Date : 19.11.95 17:38:43 LC : A IQ : 00  
Lat1 : 14.866S Lon1 : 169.191W  
178 850 421 49  
00 00

25692 Date : 20.11.95 18:59:31 LC : 0 IQ : 60  
Lat1 : 14.490S Lon1 : 168.165W  
179 1045 399 52  
00 00

• 25692 Date : 28.11.95 06:39:21 LC : 1 IQ : 50  
Lat1 : 14.543S Lon1 : 168.117W  
176 10 357 54  
00 00

• 25692 Date : 28.11.95 19:27:32 LC : 1 IQ : 58  
Lat1 : 14.554S Lon1 : 168.165W  
179 05 93 29  
00 00

25692 Date : 29.11.95 19:03:15 LC : A IQ : 00  
Lat1 : 14.513S Lon1 : 168.032W  
180 647 98 182  
00 00

25692 Date : 30.11.95 18:47:47 LC : 0 IQ : 57  
Lat1 : 14.571S Lon1 : 168.131W  
~~25692~~ 180 901 473 43 ~~25692~~ 168.112W  
00 00

25692 Date : 02.12.95 05:12:19 LC : 1 IQ : 60  
Lat1 : 14.614S Lon1 : 168.166W

25692 Date : 02.12.95 13:29:13 LC : A IQ : 08  
Lat1 : 14.569S Lon1 : 168.159W  
178 859 284 70  
00 00

25692 Date : 03.12.95 17:42:04 LC : 1 IQ : 60  
Lat1 : 14.543S Lon1 : 168.201W  
180 504 363 57  
00 00

25692 Date : 05.12.95 18:35:24 LC : A IQ : 00  
Lat1 : 11.277S Lon1 : 177.033E  
179 694 513 40  
00 00

25692  
"LEILOA"

25692 Date : 06.12.95 18:14:03 LC : 0 IQ : 50  
Lat1 : 14.531S Lon1 : 168.244W  
184 242 458 44  
00 00

25692 Date : 09.12.95 07:40:46 LC : 1 IQ : 50  
Lat1 : 14.555S Lon1 : 168.133W  
178 07 490 41  
00 00

25692 Date : 09.12.95 13:52:58 LC : 1 IQ : 58  
Lat1 : 14.545S Lon1 : 168.140W  
178 201 490 41  
00 00

25692 Date : 12.12.95 00:27:04 LC : 1 IQ : 50  
Lat1 : 14.532S Lon1 : 168.128W  
184 733 120 92  
00 00

25692 Date : 12.12.95 06:33:54 LC : 2 IQ : 58  
Lat1 : 14.547S Lon1 : 168.143W  
177 05 507 39  
00 00

25692 Date : 19.12.95 11:59:40 LC : A IQ : 00  
Lat1 : 14.530S Lon1 : 168.506W  
179 1055 381 53  
00 00

25692 Date : 23.12.95 00:10:41 LC : 1 IQ : 50  
Lat1 : 14.485S Lon1 : 168.130W  
187 20 238 89  
00 00

25692 Date : 23.12.95 17:02:31 LC : 1 IQ : 58  
Lat1 : 14.520S Lon1 : 168.148W  
180 06 135 147  
00 00

25692 Date : 24.12.95 12:50:19 LC : 1 IQ : 60  
Lat1 : 14.553S Lon1 : 168.120W  
182 50 510 40  
00 00

25692 Date : 25.12.95 17:59:52 LC : 0 IQ : 50  
Lat1 : 14.545S Lon1 : 168.141W  
181 268 382 54  
00 00

25692 Date : 27.12.95 01:04:33 LC : A IQ : 00  
Lat1 : 14.588S Lon1 : 168.286W  
185 84 735 28  
00 00

25692 Date : 28.12.95 07:24:10 LC : 0 IQ : 68  
Lat1 : 14.907S Lon1 : 169.102W  
181 08 149 143  
00 00

27 December  
departure

"25692"  
"LELVA"

25692 Date : 29.12.95 11:53:27 LC : (A) IQ : 00  
Lat1 : 15.090S Lon1 : 169.837W -

179 31 84 248  
00 00

25692 Date : 30.12.95 06:47:21 LC : (0) IQ : 60  
Lat1 : 15.212S Lon1 : 170.178W -

180 05 124 171  
00 02

25692 Date : 03.01.96 06:57:14 LC : (3) IQ : 60  
~~Lat1 : 17.819S Lon1 : 178.951E Lat2 : 15.911S Lon2 : 172.251W~~

179 07 107 1215  
00 00

25692 Date : 31.12.95 06:23:35 LC : (A) IQ : 00  
Lat1 : 15.235S Lon1 : 170.902W -

181 82 170 126  
00 00

25692 Date : 02.01.96 01:39:19 LC : B IQ : 00  
Lat1 : 15.638S Lon1 : 171.709W -

184 117 158 132  
00 00

25692 Date : 03.01.96 18:01:28 LC : (2) IQ : 68  
Lat1 : 15.989S Lon1 : 172.398W -

180 29 222 87  
00 00

25692 Date : 05.01.96 07:50:53 LC : (A) IQ : 00  
Lat1 : 16.314S Lon1 : 173.075W -

178 36 122 174  
00 00

25692 Date : 04.01.96 12:28:44 LC : (A) IQ : 00  
Lat1 : 16.144S Lon1 : 172.631W -

179 08 163 131  
00 02

25692 Date : 05.01.96 19:00:59 LC : B IQ : 00  
Lat1 : 16.345S Lon1 : 173.296W

179 27528 20886 4340  
03 53

25692 Date : 06.01.96 00:57:07 LC : B IQ : 00  
Lat1 : 16.459S Lon1 : 173.456W -

180 121 116 180  
00 00

25692 Date : 06.01.96 13:46:30 LC : (0) IQ : 60  
Lat1 : 16.502S Lon1 : 173.597W -

178 134 4467 11957  
03 31

25692 Date : 09.01.96 06:27:47 LC : 0 IQ : 50  
Lat1 : 16.488S Lon1 : 175.266W

180 75 148 144  
00 00

25692 Date : 11.01.96 07:23:38 LC : 1 IQ : 50  
Lat1 : 16.695S Lon1 : 176.585W

178 467 228 94  
00 00

25692 Date : 09.01.96 17:32:53 LC : A IQ : 08  
Lat1 : 16.483S Lon1 : 175.543W

179 05 168 124  
00 03

25692  
74  
departed  
12/27/95  
CEILUA

25692 Date : 11.01.96 12:56:04 LC : 0 IQ : 58  
Lat1 : 16.704S Lon1 : 176.682W  
179 203 228 94  
00 01

25692 Date : 11.01.96 18:28:30 LC : B IQ : 00  
Lat1 : 16.701S Lon1 : 176.855W  
179 153 199 102  
00 00

25692 Date : 12.01.96 12:44:20 LC : A IQ : 00  
Lat1 : 16.751S Lon1 : 177.345W  
179 31 163 131  
00 00

25692 Date : 12.01.96 19:49:20 LC : B IQ : 00  
Lat1 : 16.768S Lon1 : 177.468W  
180 149 185 111  
00 00

25692 Date : 14.01.96 06:11:36 LC : B IQ : 00  
Lat1 : 17.010S Lon1 : 178.322W  
179 22686 4226 164  
00 00

25692 Date : 16.01.96 18:26:47 LC : B IQ : 00  
Lat1 : 16.732S Lon1 : 179.035W  
178 689 290 70  
00 00

25692 Date : 17.01.96 00:40:50 LC : A IQ : 00  
Lat1 : 16.735S Lon1 : 179.118W  
182 35 290 70  
00 00

25692 Date : 17.01.96 06:55:00 LC : 0 IQ : 58  
Lat1 : 16.780S Lon1 : 179.328W  
179 21 105 197  
00 01

25692 Date : 17.01.96 19:36:35 LC : B IQ : 00  
Lat1 : 16.673S Lon1 : 179.599W  
180 41 147 141  
00 00

25692 Date : 18.01.96 13:26:26 LC : B IQ : 00  
Lat1 : 16.259S Lon1 : 179.786E  
179 1490 104 196  
00 00

25692 Date : 18.01.96 17:37:32 LC : A IQ : 00  
Lat1 : 16.713S Lon1 : 179.628W  
179 66 332 64  
00 00

25692 Date : 18.01.96 19:21:18 LC : B IQ : 00  
Lat1 : 16.688S Lon1 : 179.606W  
179 436 24652 200  
02 08

25692 Date : 22.01.96 01:25:51 LC : A IQ : 00  
Lat1 : 16.688S Lon1 : 179.814W  
182 21 495 43  
00 01

[CONTINUED ON P. 10]

Plot  
25692

25693

ASG purchase

ISALE

software switched

75

ST-14

on/off 3/9 for 30 days then 3/3 off

12/3/95 TOON 3/3 off

Departed Rose 1/17/96

✓ 25693 Date : 24.10.95 18:50:14 LC : 2 IQ : 50  
Lat1 : 14.543S Lon1 : 168.134W  
156 00 00 512  
00 00

2 ✓ 25693 Date : 27.10.95 06:35:49 LC : A IQ : 08  
Lat1 : 14.531S Lon1 : 168.077W  
182 822 405 48  
00 00

3 ✓ 25693 Date : 26.10.95 19:47:02 LC : 0 IQ : 60  
Lat1 : 14.372S Lon1 : 168.194W  
183 1106 283 72  
00 00

25693 Date : 29.10.95 17:02:39 LC : 0 IQ : 50  
Lat1 : 14.530S Lon1 : 168.126W  
182 82 752 27  
00 00

25693 Date : 29.10.95 18:36:20 LC : 0 IQ : 58  
Lat1 : 14.632S Lon1 : 168.029W  
183 994 752 27  
00 00

25693 Date : 01.11.95 06:27:52 LC : B IQ : 00  
Lat1 : 14.539S Lon1 : 168.120W  
183 461 753 26  
00 00

25693 Date : 02.11.95 18:55:15 LC : 1 IQ : 50  
Lat1 : 14.552S Lon1 : 168.157W  
182 150 969 53  
00 00

25693 Date : 04.11.95 05:26:26 LC : 0 IQ : 50  
Lat1 : 14.523S Lon1 : 168.124W  
182 37 264 73  
00 00

25693 Date : 05.11.95 05:01:54 LC : 1 IQ : 60  
Lat1 : 5.639S Lon1 : 128.257W  
182 58 179 111  
00 00

25693 Date : 05.11.95 06:41:57 LC : 2 IQ : 56  
Lat1 : 14.549S Lon1 : 168.142W  
181 34 179 111  
00 00

25693 Date : 05.11.95 17:47:03 LC : 1 IQ : 58  
Lat1 : 14.541S Lon1 : 168.158W  
181 1088 90 220  
00 00

25693 Date : 07.11.95 05:58:23 LC : 1 IQ : 50  
Lat1 : 14.545S Lon1 : 168.137W  
182 14 201 94  
00 00

76  
ISACEI  
25693

25693 Date : 08.11.95 05:32:43 LC : 0 IQ : 50  
Lat1 : 14.566S Lon1 : 168.267W  
182 1026 787 25  
00 00

1 25693 Date : 09.11.95 05:17:45 LC : 0 IQ : 60  
Lat1 : 14.520S Lon1 : 168.058W  
182 916 546 37  
00 00

2 25693 Date : 09.11.95 18:00:29 LC : 1 IQ : 60  
Lat1 : 14.541S Lon1 : 168.149W  
182 9060 742 27  
00 00

3 25693 Date : 09.11.95 18:00:29 LC : 1 IQ : 60  
Lat1 : 14.541S Lon1 : 168.149W  
182 9060 742 27  
00 00

25693 Date : 15.11.95 17:28:42 LC : A IQ : 00  
Lat1 : 14.573S Lon1 : 167.999W  
181 271 300 66  
00 00

X 25693 Date : 17.11.95 05:45:00 LC : A IQ : 00  
Lat1 : 14.331S Lon1 : 167.869W  
183 16 232 89  
00 00

X 25693 Date : 18.11.95 06:59:55 LC : 1 IQ : 50  
Lat1 : 14.542S Lon1 : 168.155W  
182 141 793 25  
00 00

25693 Date : 18.11.95 19:45:50 LC : 0 IQ : 50  
Lat1 : 14.374S Lon1 : 168.092W  
183 1114 141 142  
00 00

25693 Date : 21.11.95 05:52:31 LC : 1 IQ : 50  
Lat1 : 14.539S Lon1 : 168.112W  
182 26 157 118  
00 00

25693 Date : 22.11.95 05:34:16 LC : 0 IQ : 50  
Lat1 : 14.506S Lon1 : 168.066W  
183 1284 840 24  
00 00

25693 Date : 25.11.95 18:52:05 LC : A IQ : 00  
Lat1 : 14.549S Lon1 : 168.150W  
183 116 688 30  
00 00

25693 Date : 30.11.95 17:01:58 LC : A IQ : 00  
Lat1 : 14.448S Lon1 : 168.291W  
182 968 343 61  
00 00

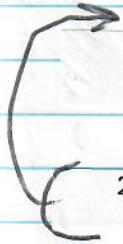


ISALE1  
25693

25693 Date : 03.12.95 13:15:57 LC : 1 IQ : 58  
Lat1 : 14.547S Lon1 : 168.126W  
183 35 111 178  
00 02

25693 Date : 04.12.95 13:06:00 LC : 2 IQ : 58  
Lat1 : 14.548S Lon1 : 168.137W  
184 08 144 132  
00 00

25693 Date : 05.12.95 05:46:37 LC : 2 IQ : 50  
Lat1 : 14.545S Lon1 : 168.139W  
185 41 359 54  
00 00



25693 Date : 05.12.95 23:52:03 LC : 1 IQ : 60  
Lat1 : 14.614S Lon1 : 168.221W  
189 1061 71 59  
00 00

25693 Date : 05.12.95 12:53:37 LC : 1 IQ : 58  
Lat1 : 14.550S Lon1 : 168.134W  
182 18 359 54  
00 00

25693 Date : 06.12.95 01:26:29 LC : 0 IQ : 58  
Lat1 : 15.197S Lon1 : 168.922W  
189 1137 71 59  
00 00

25693 Date : 06.12.95 05:26:45 LC : 1 IQ : 58  
Lat1 : 14.544S Lon1 : 168.140W  
185 07 377 50  
00 01

25693 Date : 06.12.95 07:06:19 LC : 1 IQ : 57  
Lat1 : 14.557S Lon1 : 168.171W  
182 10 377 50  
00 00

25693 Date : 07.12.95 06:44:45 LC : 1 IQ : 56  
Lat1 : 14.557S Lon1 : 168.149W  
182 19 315 61  
00 00

25693 Date : 07.12.95 12:33:00 LC : 3 IQ : 68  
Lat1 : 14.547S Lon1 : 168.144W  
184 05 315 61  
00 00

25693 Date : 07.12.95 17:49:19 LC : 2 IQ : 68  
Lat1 : 14.547S Lon1 : 168.164W  
186 32 26 165  
00 00



25693 Date : 17.12.95 12:24:14 LC : 2 IQ : 50  
Lat1 : 14.552S Lon1 : 168.145W  
183 22 567 35  
00 01

25693 Date : 18.12.95 18:52:03 LC : 2 IQ : 58  
Lat1 : 14.536S Lon1 : 168.128W  
194 09 92 142  
00 00

ISAC 78  
25693

25693 Date : 19.12.95 00:50:53 LC : 1 IQ : 57  
Lat1 : 14.543S Lon1 : 168.136W  
203 05 92 142  
00 00

ISAC

25693 Date : 20.12.95 05:20:39 LC : 3 IQ : 60  
Lat1 : 14.554S Lon1 : 168.143W  
186 156 344 57  
00 00

25693 Date : 19.12.95 12:02:33 LC : 2 IQ : 67  
Lat1 : 14.539S Lon1 : 168.124W  
182 65 112 87  
00 00

25693 Date : 19.12.95 13:45:00 LC : 1 IQ : 58  
Lat1 : 14.544S Lon1 : 168.150W  
183 05 112 87  
00 01

25693 Date : 20.12.95 07:01:23 LC : 1 IQ : 57  
Lat1 : 14.552S Lon1 : 168.157W  
182 06 344 57  
00 00

25693 Date : 20.12.95 11:53:16 LC : 2 IQ : 57  
Lat1 : 14.547S Lon1 : 168.136W  
178 15 344 57  
00 00

25693 Date : 22.12.95 17:28:33 LC : 0 IQ : 60  
Lat1 : 14.575S Lon1 : 168.125W  
184 1273 646 34  
00 00

25693 Date : 23.12.95 18:41:30 LC : 1 IQ : 50  
Lat1 : 14.549S Lon1 : 168.154W  
185 51 531 39  
00 00

25693 Date : 28.12.95 00:58:48 LC : 0 IQ : 50  
Lat1 : 14.495S Lon1 : 168.060W  
188 1169 824 25  
00 00

25693 Date : 29.12.95 00:40:25 LC : 0 IQ : 50  
Lat1 : 14.519S Lon1 : 168.144W  
191 1102 692 30  
00 00

25693 Date : 31.12.95 13:15:51 LC : 1 IQ : 50  
Lat1 : 14.547S Lon1 : 168.141W  
184 136 488 42  
00 00

25693 Date : 03.01.96 01:26:35 LC : 0 IQ : 60  
Lat1 : 14.512S Lon1 : 168.119W  
188 09 109 143  
00 01

25693 Date : 03.01.96 06:55:06 LC : 1 IQ : 50  
Lat1 : 14.556S Lon1 : 168.153W  
178 06 169 113  
00 00

25693 Date : 01.01.96 13:04:49 LC : 3 IQ : 60  
Lat1 : 14.543S Lon1 : 168.144W  
184 32 579 35  
00 00

25693 Date : 02.01.96 07:18:29 LC : 1 IQ : 50  
Lat1 : 14.548S Lon1 : 168.144W



25693

25693 Date : 03.01.96 12:42:45 LC : 2 IQ : 58  
Lat1 : 14.550S Lon1 : 168.134W Lat2 : 15.585S Lon2 : 163.606W  
179 06 169 113  
00 00

25693 Date : 06.01.96 05:48:36 LC : 0 IQ : 58  
Lat1 : 14.546S Lon1 : 168.805W  
184 26 106 198  
00 00

Departure 5 JANUARY 96

25693 Date : 05.01.96 06:17:08 LC : 0 IQ : 60  
Lat1 : 14.623S Lon1 : 168.188W  
184 09 106 189  
00 01

25693 Date : 06.01.96 12:12:14 LC : 2 IQ : 68  
Lat1 : 14.618S Lon1 : 168.879W  
183 41 106 198  
00 00

"ISALET"

25693 Date : 06.01.96 13:51:37 LC : 1 IQ : 50  
Lat1 : 14.652S Lon1 : 168.911W  
183 23 106 198  
00 00

25693 Date : 07.01.96 13:37:35 LC : A IQ : 08  
Lat1 : 14.868S Lon1 : 169.420W  
183 57 99 214  
00 00

25693 Date : 08.01.96 00:36:51 LC : A IQ : 00  
Lat1 : 14.911S Lon1 : 169.638W  
184 116 103 200  
00 00

25693 Date : 08.01.96 17:56:31 LC : A IQ : 00  
Lat1 : 15.140S Lon1 : 169.925W  
183 110 94 219  
00 00

25693 Date : 09.01.96 00:24:08 LC : A IQ : 08  
Lat1 : 15.168S Lon1 : 170.097W  
187 88 94 219  
00 00

25693 Date : 10.01.96 18:50:39 LC : A IQ : 08  
Lat1 : 15.465S Lon1 : 171.126W  
183 1233 2916714743  
00 48

25693 Date : 11.01.96 12:53:30 LC : A IQ : 00  
Lat1 : 15.526S Lon1 : 171.506W  
182 97 103 205  
00 00

25693 Date : 12.01.96 18:08:51 LC : 1 IQ : 60  
Lat1 : 15.996S Lon1 : 171.855W Lat2 : 16.821S Lon2 : 168.127W  
182 83 108 8383  
00 01

25693 Date : 09.01.96 17:33:38 LC : 3 IQ : 68  
Lat1 : 15.359S Lon1 : 170.520W  
183 150 108 190  
00 00

25693 Date : 10.01.96 01:49:18 LC : B IQ : 00  
Lat1 : 15.860S Lon1 : 171.165W  
178 34090 20645 10836  
00 AE

25693 Date : 10.01.96 07:43:27 LC : 1 IQ : 50  
Lat1 : 15.386S Lon1 : 170.943W  
183 356 226 211  
01 18

Depos 196  
1-80  
ISALEI

25693 Date : 13.01.96 01:22:42 LC : B IQ : 00  
Lat1 : 16.096S Lon1 : 172.035W  
184 447 108 191  
00 00

25693 Date : 13.01.96 17:43:37 LC : 2 IQ : 50  
Lat1 : 16.254S Lon1 : 172.344W Lat2 : 19.541S Lon2 : 157  
182 25 119 173  
00 01

25693 Date : 13.01.96 19:26:08 LC : B IQ : 00  
Lat1 : 16.266S Lon1 : 172.390W  
182 27 119 173  
00 01

25693 Date : 14.01.96 01:15:08 LC : A IQ : 08  
Lat1 : 16.316S Lon1 : 172.557W  
183 24 119 173  
00 00

25693 Date : 15.01.96 12:15:14 LC : 2 IQ : 58  
Lat1 : 16.383S Lon1 : 172.869W  
181 14 80 263  
00 01

25693 Date : 15.01.96 13:51:35 LC : A IQ : 08  
Lat1 : 16.404S Lon1 : 172.914W  
181 28 80 263  
00 00

25693 Date : 16.01.96 00:47:49 LC : A IQ : 00  
Lat1 : 16.444S Lon1 : 173.162W  
184 102 97 207  
00 01

25693 Date : 17.01.96 00:38:14 LC : B IQ : 00  
Lat1 : 16.054S Lon1 : 173.673W  
187 334 112 179  
00 00

25693 Date : 18.01.96 06:28:42 LC : 1 IQ : 50  
Lat1 : 15.941S Lon1 : 173.831W  
182 54 419 49  
00 00

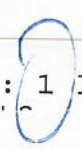
25693 Date : 18.01.96 13:27:13 LC : B IQ : 00  
Lat1 : 16.075S Lon1 : 174.002W  
182 517 419 49  
00 00

25693 Date : 18.01.96 17:39:08 LC : A IQ : 08  
Lat1 : 16.107S Lon1 : 174.003W  
182 142 149 139  
00 00

25693 Date : 18.01.96 19:15:59 LC : B IQ : 00  
Lat1 : 16.135S Lon1 : 174.038W  
182 48 149 139  
00 00

23693

Plot 1



25693 Date : 19.01.96 06:07:29 LC : 2 IQ : 50  
Lat1 : 16.295S Lon1 : 174.272W  
181 15 91 231  
00 01

25693 Date : 19.01.96 07:47:03 LC : 2 IQ : 68  
Lat1 : 16.308S Lon1 : 174.294W  
180 19 91 231  
00 01

25693 Date : 19.01.96 17:15:44 LC : A IQ : 08  
Lat1 : 16.379S Lon1 : 174.483W  
181 116 113 183  
00 00

25693 Date : 19.01.96 18:56:57 LC : B IQ : 00  
Lat1 : 16.406S Lon1 : 174.532W  
182 126 113 183  
00 00

25693 Date : 20.01.96 01:46:13 LC : 1 IQ : 58  
Lat1 : 16.398S Lon1 : 174.815W  
184 149 113 183  
00 00

25693 Date : 20.01.96 07:25:03 LC : 1 IQ : 58  
Lat1 : 16.409S Lon1 : 174.954W  
180 22 115 185  
00 00

25693 Date : 20.01.96 12:58:18 LC : B IQ : 00  
Lat1 : 16.379S Lon1 : 175.005W  
181 108 115 185  
00 00

25693 Date : 21.01.96 07:02:11 LC : B IQ : 00  
Lat1 : 16.486S Lon1 : 175.585W  
182 26 107 196  
00 00

25693  
"ISALET"

25693 Date : 21.01.96 18:13:22 LC : B IQ : 00  
Lat1 : 16.521S Lon1 : 175.730W  
182 07 98 212  
00 03

25693 Date : 22.01.96 01:26:37 LC : A IQ : 00  
Lat1 : 16.515S Lon1 : 175.899W  
184 117 98 212  
00 00

25693 Date : 22.01.96 12:37:10 LC : A IQ : 08  
Lat1 : 16.682S Lon1 : 176.209W  
181 22 100 211  
00 00

25693 Date : 22.01.96 17:46:11 LC : B IQ : 00  
Lat1 : 16.711S Lon1 : 176.537W  
182 59 114 181  
00 00

25693 Date : 23.01.96 01:12:57 LC : A IQ : 08  
Lat1 : 16.645S Lon1 : 176.591W  
183 143 114 181  
00 00

25693 Date : 23.01.96 06:20:41 LC : A IQ : 00

Lat1 : 16.589S Lon1 : 176.782W

182 09 98 213

00 01

25693 Date : 23.01.96 07:57:10 LC : B IQ : 00

Lat1 : 16.554S Lon1 : 176.729W

25693 Date : 23.01.96 12:31:32 LC : (0) IQ : 58

Lat1 : 16.558S Lon1 : 176.963W

181 23 98 213

00 00

25693 Date : 23.01.96 17:32:26 LC : B IQ : 00

Lat1 : 16.542S Lon1 : 177.041W

181 738 106 196

00 00

25693 Date : 24.01.96 01:04:03 LC : (2) IQ : 50

Lat1 : 16.499S Lon1 : 177.263W

188 31 106 196

00 00

25693 Date : 24.01.96 07:34:42 LC : B IQ : 00

Lat1 : 16.139S Lon1 : 177.018W

183 366 89 238

00 00

25693 Date : 24.01.96 12:18:35 LC : 0 IQ : 58

Lat1 : 16.449S Lon1 : 177.553W

181 76 89 238

00 00

25693 Date : 24.01.96 18:48:21 LC : A IQ : 08

Lat1 : 16.410S Lon1 : 177.661W

183 119 104 201

00 00

25693 Date : 25.01.96 00:53:11 LC : (A) IQ : 08

Lat1 : 16.438S Lon1 : 177.811W

186 26 616 201

00 00

25693 Date : 25.01.96 13:51:44 LC : B IQ : 00

Lat1 : 16.523S Lon1 : 179.016W

182 647 80 260

00 00

25693 Date : 26.01.96 00:42:38 LC : (A) IQ : 00

Lat1 : 16.287S Lon1 : 178.349W

187 1110 14236 31913

01 27

25693 Date : 26.01.96 18:06:00 LC : B IQ : 00

Lat1 : 16.242S Lon1 : 178.627W

183 176 105 197

00 00

25693 Date : 27.01.96 06:32:55 LC : (B) IQ : 00

Lat1 : 16.339S Lon1 : 179.176W

183 130 86 333

00 16

25693 Date : 28.01.96 06:13:57 LC : (0) IQ : 50

Lat1 : 16.304S Lon1 : 179.397W

182 52 127 167

00 00

25693 "ZSACE" 82

25693 Date : 28.01.96 13:15:24 LC : ① IQ : 58  
Lat1 : 16.403S Lon1 : 179.576W Lat2 : 18.879S Lon2 : 168.587W 83  
181 103 127 167  
00 01

25693 Date : 28.01.96 19:00:50 LC : ① IQ : 58  
Lat1 : 16.518S Lon1 : 179.624W Lat2 : 15.009S Lon2 : 173.554E  
182 78 75 281  
00 00

25693 Date : 29.01.96 05:50:59 LC : B IQ : 00  
Lat1 : 16.514S Lon1 : 179.654W  
182 209 329 1215  
00 00

25693 Date : 30.01.96 01:37:33 LC : 0 IQ : 50  
Lat1 : 16.576S Lon1 : 179.868W  
183 30 208 101  
00 00

25693 Date : 30.01.96 18:18:31 LC : ① IQ : 60  
Lat1 : 16.664S Lon1 : 179.920E  
183 23 118 179  
00 00

25693 Date : 31.01.96 06:49:38 LC : ② IQ : 50  
Lat1 : 16.787S Lon1 : 179.907E  
184 22 134 158  
00 00

25693 Date : 31.01.96 17:58:10 LC : B IQ : 00  
Lat1 : 16.761S Lon1 : 179.808E  
184 201 146 146  
00 00

25693 Date : 31.01.96 19:33:59 LC : B IQ : 00  
Lat1 : 16.801S Lon1 : 179.845E  
185 99 146 146  
00 00

25693 Date : 01.02.96 06:25:36 LC : B IQ : 00  
Lat1 : 16.735S Lon1 : 179.798E  
185 166 148 144  
00 00

25693 Date : 01.02.96 12:32:43 LC : B IQ : 00  
Lat1 : 16.775S Lon1 : 179.711E  
185 194 148 144  
00 00

25693 Date : 02.02.96 01:05:41 LC : ① IQ : 00  
Lat1 : 16.815S Lon1 : 179.566E  
188 108 185 115  
00 00

25693 Date : 02.02.96 06:01:31 LC : B IQ : 00  
Lat1 : 16.793S Lon1 : 179.517E  
185 245 107 196  
00 00

25693 Date : 02.02.96 07:47:23 LC : A IQ : 08  
Lat1 : 16.808S Lon1 : 179.440E  
184 14 107 196  
00 01

25693  
"ISMEI"

25693 Date : 30.01.96 12:54:33 LC : B IQ : 00  
Lat1 : 16.629S Lon1 : 179.888E  
182 423 110 191  
00 00

Plot  
Plot

Plot

19.9

25693 Date : 02.02.96 18:49:04 LC : B IQ : 00  
 Lat1 : 16.985S Lon1 : 179.295W Lat2 : 16.236S Lon2 : 177.272E  
 184 268 276 77  
 00 00

25693 Date : 03.02.96 00:55:12 LC : A IQ : 00 *Plot*  
 Lat1 : 16.866S Lon1 : 179.303E Lat2 : 9.297S Lon2 : 148.083W  
 186 26 276 77  
 00 00

25693 Date : 03.02.96 07:17:02 LC : B IQ : 00  
 Lat1 : 16.363S Lon1 : 179.862E Lat2 : 17.949S Lon2 : 174.422E  
 184 153 129 165  
 00 00

25693 Date : 04.02.96 06:56:35 LC : B IQ : 00  
 Lat1 : 16.797S Lon1 : 178.748E  
 184 1148 314 65  
 00 00

25693 Date : 05.02.96 19:21:59 LC : B IQ : 00  
 Lat1 : 16.961S Lon1 : 179.460E  
 183 172 4492 46961  
 00 04

25693 Date : 05.02.96 17:44:51 LC : B IQ : 00  
 Lat1 : 16.760S Lon1 : 179.167E  
 184 97 392 37  
 00 00

25693 Date : 05.02.96 13:24:41 LC : A IQ : 00 *Plot*  
 Lat1 : 16.844S Lon1 : 178.917E  
 184 1552 378 54  
 00 00

25693 Date : 06.02.96 19:04:18 LC : B IQ : 00  
 Lat1 : 16.556S Lon1 : 179.272E Lat2 : 15.160S Lon2 : 177.272E  
 184 61 487 42  
 00 01

25693 Date : 07.02.96 01:48:07 LC : B IQ : 00  
 Lat1 : 16.703S Lon1 : 178.673E  
 185 25 487 42  
 00 00

25693 Date : 08.02.96 01:40:17 LC : A IQ : 00  
 Lat1 : 16.801S Lon1 : 179.225E  
 184 1316 491 42  
 00 00

25693 Date : 08.02.96 12:51:56 LC : A IQ : 08  
 Lat1 : 16.819S Lon1 : 179.012E  
 183 1515 410 32819  
 00 00

25693 Date : 08.02.96 18:22:13 LC : A IQ : 00  
 Lat1 : 16.823S Lon1 : 179.211E  
 183 177 397 52  
 00 00



25694

ST-14  
313 OFF

"AVLOTV"

85  
HPD

Purchased by GHB

~~AVLOTV~~

NO  
Software  
Switch

✓ 25694 Date : 26.10.95 11:45:53 LC : 2 IQ : 60  
1 Lat1 : 14.549S Lon1 : 168.144W  
180 05 105 156  
00 00

✓ 25694 Date : 26.10.95 11:45:53 LC : 2 IQ : 60  
Lat1 : 14.549S Lon1 : 168.144W  
2 180 05 105 156  
00 00

✓ 25694 Date : 26.10.95 13:26:19 LC : 3 IQ : 68  
1 Lat1 : 14.546S Lon1 : 168.146W  
3 178 05 105 156  
00 00

✓ 25694 Date : 26.10.95 18:10:22 LC : B IQ : 00  
1 Lat1 : 14.706S Lon1 : 166.217W  
4 183 130 33 145  
00 00

✓ 25694 Date : 27.10.95 13:17:06 LC : A IQ : 00  
Lat1 : 14.547S Lon1 : 168.136W  
5 183 41 180 112  
00 00

✓ 25694 Date : 27.10.95 17:39:39 LC : A IQ : 00  
Lat1 : 14.449S Lon1 : 167.834W  
6 183 798 254 82  
00 00

✓ 25694 Date : 28.10.95 06:10:36 LC : B IQ : 00  
Lat1 : 14.614S Lon1 : 167.911W  
7 184 115 703 29  
00 00

✓ 25694 Date : 27.10.95 19:24:50 LC : 0 IQ : 60  
Lat1 : 14.551S Lon1 : 168.133W  
8 184 1154 254 82  
00 00

25694 Date : 27.10.95 19:24:50 LC : 0 IQ : 60  
Lat1 : 14.551S Lon1 : 168.133W  
184 1154 254 82  
00 00

25694 Date : 28.10.95 12:59:32 LC : 0 IQ : 50  
Lat1 : 14.550S Lon1 : 168.146W  
183 35 703 29  
00 00

25694 Date : 29.10.95 23:48:57 LC : 1 IQ : 60  
Lat1 : 14.588S Lon1 : 168.186W  
187 1322 305 68  
00 00

25694 Date : 31.10.95 17:56:13 LC : A IQ : 00  
Lat1 : 14.550S Lon1 : 168.145W  
184 819 1085 19  
00 00

"25694"  
"AULON"

25694 Date : 02.11.95 06:05:19 LC : A IQ : 00  
Lat1 : 14.557S Lon1 : 168.176W  
184 1432 779 26  
00 00

25694 Date : 02.11.95 17:13:59 LC : 2 IQ : 60  
Lat1 : 14.554S Lon1 : 168.157W  
183 05 1287 16  
00 00

25694 Date : 03.11.95 18:27:17 LC : A IQ : 00  
Lat1 : 14.471S Lon1 : 168.250W  
183 1335 1084 19  
00 00

25694 Date : 05.11.95 11:39:36 LC : B IQ : 00  
Lat1 : 14.529S Lon1 : 168.123W  
181 238 332 61  
00 00

25694 Date : 06.11.95 00:16:52 LC : 1 IQ : 60  
Lat1 : 14.559S Lon1 : 168.126W  
183 1162 278 74  
00 00

25694 Date : 06.11.95 17:23:58 LC : 1 IQ : 58  
Lat1 : 14.540S Lon1 : 168.157W  
182 90 151 134  
00 00

25694 Date : 08.11.95 05:35:46 LC : 2 IQ : 60  
Lat1 : 14.532S Lon1 : 168.148W  
184 46 195 104  
00 00

25694 Date : 08.11.95 07:14:53 LC : 3 IQ : 67  
Lat1 : 14.535S Lon1 : 168.149W  
180 09 195 104  
00 00

25694 Date : 08.11.95 12:44:09 LC : 1 IQ : 68  
Lat1 : 14.547S Lon1 : 168.143W  
180 28 195 104  
00 00

25694 Date : 09.11.95 01:22:49 LC : 1 IQ : 50  
Lat1 : 14.538S Lon1 : 168.133W  
185 44 67 54  
00 00

25694 Date : 13.11.95 05:24:55 LC : A IQ : 00  
Lat1 : 14.529S Lon1 : 168.113W  
183 1281 972 21  
00 00

25694 Date : 13.11.95 18:12:23 LC : B IQ : 00  
Lat1 : 14.529S Lon1 : 168.208W  
183 1422 184 115  
00 00

25694 Date : 16.11.95 01:46:19 LC : 1 IQ : 60  
Lat1 : 18.733S Lon1 : 173.509E Lat2 : 14.547S Lon2 : 168.146W

185 08 741 28  
00 00

"AULOTU"

X 25694 Date : 16.11.95 18:44:54 LC : 0 IQ : 50  
Lat1 : 14.557S Lon1 : 168.169W

186 15 987 21  
00 00

X 25694 Date : 19.11.95 04:59:08 LC : A IQ : 00  
Lat1 : 14.512S Lon1 : 168.267W

184 1113 241 86  
00 00

25694 Date : 22.11.95 07:10:44 LC : 3 IQ : 66  
Lat1 : 14.550S Lon1 : 168.145W

181 06 323 63  
00 00

25694 Date : 22.11.95 11:55:50 LC : 2 IQ : 58  
Lat1 : 14.545S Lon1 : 168.141W

177 06 323 63  
00 00

25694 Date : 23.11.95 00:35:50 LC : B IQ : 00  
Lat1 : 14.911S Lon1 : 168.697W

184 1374 60 83  
00 00

25694 Date : 24.11.95 19:14:21 LC : 1 IQ : 50  
Lat1 : 14.544S Lon1 : 168.156W

184 64 868 24  
00 00

25694 Date : 28.11.95 05:02:25 LC : 0 IQ : 60  
Lat1 : 14.528S Lon1 : 168.181W

185 1226 464 45  
00 00

25694 Date : 25.11.95 17:12:46 LC : 1 IQ : 50  
Lat1 : 14.537S Lon1 : 168.160W

184 108 695 30  
00 00

25694 Date : 30.11.95 00:55:14 LC : 1 IQ : 50  
Lat1 : 14.552S Lon1 : 168.147W

191 175 991 21  
00 00

25694 Date : 30.11.95 17:04:51 LC : 1 IQ : 50  
Lat1 : 14.555S Lon1 : 168.166W

184 14 633 49  
01 04

25694 Date : 30.11.95 18:44:48 LC : 2 IQ : 68  
Lat1 : 14.552S Lon1 : 168.149W

184 1253 633 33  
00 00

25694 Date : 05.12.95 12:54:28 LC : 2 IQ : 60  
Lat1 : 14.549S Lon1 : 168.133W

181 15 125 157  
00 00

25694  
"AVLOTU"

25694 Date : 06.12.95 05:26:11 LC : 2 IQ : 50  
Lat1 : 14.546S Lon1 : 168.137W  
187 30 591 34  
00 00

25694 Date : 06.12.95 12:44:30 LC : 2 IQ : 58  
Lat1 : 14.550S Lon1 : 168.140W  
181 26 591 16418  
00 00

25694 Date : 06.12.95 23:40:36 LC : 1 IQ : 58  
Lat1 : 14.548S Lon1 : 168.142W  
197 09 29 57  
00 00

25694 Date : 14.12.95 17:01:23 LC : 1 IQ : 50  
Lat1 : 14.535S Lon1 : 168.159W  
185 100 307 67  
00 00

25694 Date : 16.12.95 12:36:14 LC : 2 IQ : 50  
Lat1 : 14.543S Lon1 : 168.146W  
184 33 564 36  
00 01

25694 Date : 16.12.95 17:55:34 LC : 1 IQ : 56  
Lat1 : 14.540S Lon1 : 168.167W  
182 07 56 228  
00 00

25694 Date : 16.12.95 19:35:37 LC : 2 IQ : 68  
Lat1 : 14.541S Lon1 : 168.133W  
200 07 56 228  
00 00

25694 Date : 17.12.95 17:37:28 LC : 0 IQ : 50  
Lat1 : 14.532S Lon1 : 168.153W  
185 07 187 110  
00 01

25694 Date : 21.12.95 04:59:05 LC : 0 IQ : 50  
Lat1 : 14.565S Lon1 : 168.175W  
186 08 335 62  
00 00

25694 Date : 22.12.95 00:18:46 LC : 1 IQ : 50  
Lat1 : 14.546S Lon1 : 168.181W  
189 111 630 33  
00 01

25694 Date : 22.12.95 19:03:27 LC : 0 IQ : 50  
Lat1 : 14.550S Lon1 : 168.140W  
186 1320 473 44  
00 00

25694 Date : 26.12.95 19:15:08 LC : A IQ : 00  
Lat1 : 14.536S Lon1 : 168.067W  
187 1310 548 38  
00 00

25694 Date : 09.01.96 13:17:49 LC : 3 IQ : 60  
Lat1 : 14.547S Lon1 : 168.142W  
177 05 650 32  
00 00

25694 Date : 09.01.96 17:33:01 LC : 3 IQ : 58  
Lat1 : 14.549S Lon1 : 168.146W  
184 08 78 116  
00 00

25694  
"AULOTU"

25694 Date : 28.12.95 12:08:08 LC : 3 IQ : 60  
Lat1 : 14.556S Lon1 : 168.139W  
179 05 661 31  
00 00

25694 Date : 01.01.96 00:13:19 LC : 1 IQ : 60  
Lat1 : 14.560S Lon1 : 168.158W  
189 73 444 47  
00 01

25694 Date : 01.01.96 17:07:36 LC : 1 IQ : 50  
Lat1 : 14.545S Lon1 : 168.166W  
186 115 349 60  
00 00

25694 Date : 03.01.96 12:41:11 LC : B IQ : 00  
Lat1 : 14.551S Lon1 : 168.114W Lat2 : 15.576S Lon2 : 163.573W  
187 721 319 64  
00 01

25694 Date : 06.01.96 17:01:02 LC : B IQ : 00  
Lat1 : 14.533S Lon1 : 168.148W  
185 1638 1309 16  
00 00

Departure ←

25694 Date : 10.01.96 18:50:08 LC : B IQ : 00  
Lat1 : 14.855S Lon1 : 168.495W  
186 218 119 211  
00 36

25694 Date : 11.01.96 05:46:20 LC : B IQ : 00  
Lat1 : 14.987S Lon1 : 168.693W  
185 137 137 156  
00 00

25694 Date : 11.01.96 18:28:55 LC : A IQ : 00  
Lat1 : 14.943S Lon1 : 168.813W  
185 128 123 168  
00 00

25694 Date : 12.01.96 12:43:34 LC : B IQ : 00  
Lat1 : 15.041S Lon1 : 169.098W Lat2 : 16.138S Lon2 : 164.231W  
185 1228 146 143  
00 00

25694 Date : 12.01.96 18:08:27 LC : B IQ : 00  
Lat1 : 15.048S Lon1 : 169.273W Lat2 : 14.901S Lon2 : 169.966W  
184 151 161 131  
00 00

25694 Date : 13.01.96 01:22:31 LC : B IQ : 00  
Lat1 : 15.327S Lon1 : 169.212W Lat2 : 15.784S Lon2 : 172.062W  
184 4226 161 131  
00 00

25694 Date : 13.01.96 17:46:14 LC : B IQ : 00  
Lat1 : 15.354S Lon1 : 169.244W  
183 447 151 132  
00 02

25694  
"90"  
AVLOTU

25694 Date : 14.01.96 06:17:14 LC : 0 IQ : 50  
Lat1 : 15.397S Lon1 : 169.519W  
184 202 166 129  
00 01

25694 Date : 15.01.96 13:54:08 LC : B IQ : 00  
Lat1 : 15.329S Lon1 : 169.990W  
184 1468 1202 126  
00 32

25694 Date : 16.01.96 00:49:52 LC : B IQ : 00  
Lat1 : 15.308S Lon1 : 170.257W  
188 2255 448 34940  
01 13

25694 Date : 16.01.96 12:03:20 LC : 2 IQ : 60  
Lat1 : 15.436S Lon1 : 170.459W  
184 05 170 126  
00 01

25694 Date : 18.01.96 06:29:52 LC : 1 IQ : 60  
Lat1 : 15.619S Lon1 : 171.104W  
153 221 19129 26419  
02 48

25694 Date : 18.01.96 11:40:11 LC : B IQ : 00  
Lat1 : 15.644S Lon1 : 171.178W  
184 15 187 107  
00 01

25694 Date : 18.01.96 13:24:10 LC : A IQ : 00  
Lat1 : 15.660S Lon1 : 171.198W  
184 22 187 235  
01 00

25694 Date : 19.01.96 06:10:06 LC : A IQ : 00  
Lat1 : 15.726S Lon1 : 171.471W  
184 31 4237 34835  
00 32

25694 Date : 21.01.96 05:26:50 LC : B IQ : 00  
Lat1 : 16.216S Lon1 : 172.307W  
184 79 138 155  
00 00

25694 Date : 21.01.96 07:04:02 LC : 3 IQ : 50  
Lat1 : 16.235S Lon1 : 172.331W  
184 681 138 155  
00 00

25694 Date : 21.01.96 12:49:40 LC : B IQ : 00  
Lat1 : 16.249S Lon1 : 172.420W  
183 20688 2502 1966  
03 46

25694 Date : 22.01.96 01:26:14 LC : B IQ : 00  
Lat1 : 16.320S Lon1 : 172.842W  
186 288 142 140

Plot

"25794"  
"AULOTU"

25694 Date : 23.01.96 06:20:25 LC : (B) IQ : 00  
Lat1 : 16.666S Lon1 : 173.220W  
184 96 179 120  
00 00

25694 Date : 24.01.96 07:34:40 LC : (B) IQ : 00  
Lat1 : 16.892S Lon1 : 173.806W  
185 40 224 96  
00 00

25694 Date : 26.01.96 06:52:28 LC : (1) IQ : 60  
Lat1 : 17.085S Lon1 : 174.364W  
184 39 129 165  
00 00

25694 Date : 26.01.96 18:02:14 LC : B IQ : 00  
Lat1 : 17.093S Lon1 : 174.570W  
183 182 214 95  
00 00

25694 Date : 27.01.96 06:31:08 LC : A IQ : 00  
Lat1 : 17.303S Lon1 : 174.680W  
184 55 157 136  
00 00

25694 Date : 27.01.96 13:24:54 LC : (0) IQ : 68  
Lat1 : 17.334S Lon1 : 174.725W Lat2 : 16.348S Lon2 : 178.696W  
183 06 157 136  
00 35

25694 Date : 28.01.96 06:11:24 LC : B IQ : 00  
Lat1 : 17.227S Lon1 : 175.089W  
184 161 174 123  
00 00

25694 Date : 29.01.96 07:27:11 LC : (1) IQ : 50  
Lat1 : 17.482S Lon1 : 175.390W Lat2 : 21.678S Lon2 : 165.584E  
184 11 146 147  
00 01

25694 Date : 29.01.96 13:02:40 LC : (2) IQ : 50  
Lat1 : 17.518S Lon1 : 175.422W  
183 09 146 147  
00 01

25694 Date : 29.01.96 18:37:02 LC : B IQ : 00  
Lat1 : 17.574S Lon1 : 175.454W  
183 5337 244 16465  
00 00

25694 Date : 30.01.96 18:18:36 LC : B IQ : 00  
Lat1 : 17.906S Lon1 : 175.679W  
183 246 201 104  
00 00

25694 Date : 31.01.96 17:55:09 LC : B IQ : 00  
Lat1 : 18.023S Lon1 : 176.064W  
183 197 185 113  
00 00

25694 Date : 31.01.96 19:36:39 LC : (2) IQ : 60  
Lat1 : 18.070S Lon1 : 176.085W  
185 12 185 1137  
01 01

92  
25794  
AOLSTU

25694 Date : 01.02.96 12:34:49 LC : (1) IQ : 60  
Lat1 : 18.195S Lon1 : 176.332W  
184 10 214 100  
00 01

25694 Date : 02.02.96 07:42:22 LC : (3) IQ : 60  
Lat1 : 18.258S Lon1 : 176.617W  
185 417 362 54  
00 00

25694 Date : 03.02.96 07:19:03 LC : B IQ : 00  
Lat1 : 18.378S Lon1 : 176.834W  
185 1137 153 140  
00 00

25694 Date : 04.02.96 06:56:33 LC : Z IQ : 10  
Lat1 : 18.912S Lon1 : 178.444W Lat2 : 18.355S Lon2 : 176.824W  
181 10 33098 42330  
02 05

25694 Date : 03.02.96 12:08:33 LC : B IQ : 00  
Lat1 : 18.446S Lon1 : 176.961W  
184 09 153 140  
00 02

25694 Date : 03.02.96 18:29:26 LC : B IQ : 00  
Lat1 : 18.478S Lon1 : 177.146W Lat2 : 18.871S Lon2 : 175.004W  
184 148 140 149  
00 00

25694 Date : 04.02.96 13:38:18 LC : (A) IQ : 00  
Lat1 : 18.807S Lon1 : 177.363W  
181 36898 137 1172  
00 01

25694 Date : 04.02.96 18:07:33 LC : B IQ : 00  
Lat1 : 18.857S Lon1 : 177.369W  
182 114 144 144  
00 02

25694 Date : 05.02.96 06:36:07 LC : (A) IQ : 00  
Lat1 : 18.919S Lon1 : 177.595W  
183 41 142 1462  
00 00

25694 Date : 06.02.96 06:12:46 LC : B IQ : 00  
Lat1 : 18.994S Lon1 : 177.866W  
184 92 124 172  
00 00

25694 Date : 06.02.96 07:54:24 LC : (2) IQ : 50  
Lat1 : 18.981S Lon1 : 177.891W  
183 05 124 172  
00 00

25694 Date : 07.02.96 05:56:47 LC : B IQ : 00  
Lat1 : 19.013S Lon1 : 178.366W  
185 480 123 8365  
00 01

~~25694~~ 25694 Date : 08.02.96 12:53:32 LC : (B) IQ : 00  
Lat1 : 18.970S Lon1 : 178.482W  
183 258 211 101  
00 01



25694  
"AVZOTU"

25694 Date : 10.02.96 01:19:49 LC : 1 IQ : 58  
Lat1 : 19.033S Lon1 : 179.099W  
188 84 240 88  
00 00

25694 Date : 10.02.96 06:26:14 LC : 3 IQ : 60  
Lat1 : 19.072S Lon1 : 179.268W  
185 94 127 168  
00 00

25694 Date : 11.02.96 01:07:55 LC : B IQ : 00  
Lat1 : 19.155S Lon1 : 179.844W  
189 24 141 149  
00 00

25694 Date : 11.02.96 06:04:36 LC : A IQ : 00  
Lat1 : 19.202S Lon1 : 179.969E  
186 63 140 152  
00 01

25694 Date : 11.02.96 18:52:38 LC : B IQ : 00  
Lat1 : 19.277S Lon1 : 179.962W  
183 179 143 147  
00 00

25694 Date : 12.02.96 07:27:24 LC : 0 IQ : 50  
Lat1 : 19.121S Lon1 : 179.463E  
183 12 243 187  
02 03

25694 Date : 12.02.96 18:34:19 LC : B IQ : 00  
Lat1 : 19.179S Lon1 : 179.274E  
184 163 144 145  
00 00

25694 Date : 13.02.96 18:12:33 LC : 2 IQ : 60  
Lat1 : 19.471S Lon1 : 178.793E  
184 15 131 155  
00 01

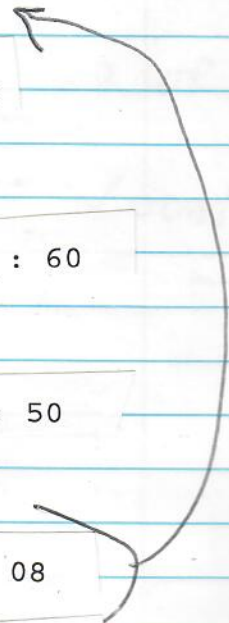
25694 Date : 14.02.96 00:35:12 LC : B IQ : 00  
Lat1 : 19.453S Lon1 : 178.755E  
188 08 131 155  
00 02

25694 Date : 15.02.96 17:29:50 LC : 0 IQ : 60  
Lat1 : 19.488S Lon1 : 178.293E  
182 1210 153 134  
00 00

25694 Date : 16.02.96 07:36:55 LC : 2 IQ : 50  
Lat1 : 19.316S Lon1 : 178.217E  
182 739 120 177  
00 00

25694 Date : 13.02.96 19:51:47 LC : A IQ : 08  
Lat1 : 19.477S Lon1 : 178.798E  
186 05 131 139

25694 Date : 16.02.96 13:13:34 LC : A IQ : 08  
Lat1 : 19.235S Lon1 : 178.173E  
182 44 120 177  
00 01



94  
25694  
"AVZOTU"

25694 Date : 16.02.96 18:43:26 LC : B IQ : 00

Lat1 : 19.211S Lon1 : 177.660E

182 4173 49369 22936

02 46

25694 Date : 18.02.96 06:54:46 LC : A IQ : 00

Lat1 : 19.111S Lon1 : 177.970E

183 12 141 151

00 01

25694 Date : 20.02.96 01:11:56 LC : B IQ : 00

Lat1 : 18.892S Lon1 : 178.287E

189 12 441 48

00 01

25694 Date : 21.02.96 07:31:11 LC : 2 IQ : 50

Lat1 : 18.718S Lon1 : 178.272E

185 06 78 269

00 02

25694 Date : 22.02.96 07:11:17 LC : Z IQ : 10

Lat1 : 18.074S Lon1 : 178.963E

183 15 62 336

00 02

25694 Date : 22.02.96 18:14:52 LC : B IQ : 00

Lat1 : 18.105S Lon1 : 178.538E

179 147 112 185

00 00

25694 Date : 23.02.96 06:49:53 LC : B IQ : 00

Lat1 : 17.811S Lon1 : 179.038E

181 443 49292 26941

02 63

25694 Date : 24.02.96 06:21:57 LC : B IQ : 00

Lat1 : 17.962S Lon1 : 178.695E

180 128 163 161

00 00

25694 Date : 24.02.96 13:22:50 LC : B IQ : 00

Lat1 : 17.825S Lon1 : 178.704E

181 187 131 8431

00 57

25694 Date : 24.02.96 19:10:06 LC : B IQ : 00

Lat1 : 17.808S Lon1 : 178.821E

183 42 169 637

02 17

25694 Date : 25.02.96 18:44:04 LC : B IQ : 00

Lat1 : 17.587S Lon1 : 177.974E

184 66 175 121

00 00

25694 Date : 26.02.96 01:49:27 LC : B IQ : 00

Lat1 : 17.834S Lon1 : 178.613E

186 462 175 121

00 00

25694 Date : 26.02.96 07:22:13 LC : A IQ : 00

Lat1 : 17.822S Lon1 : 178.651E

186 89 169 127

00 01

25694 Date : 26.02.96 18:28:52 LC : B IQ : 00

Lat1 : 17.726S Lon1 : 178.667E

185 48 276 76

00 00

OCT, 1995

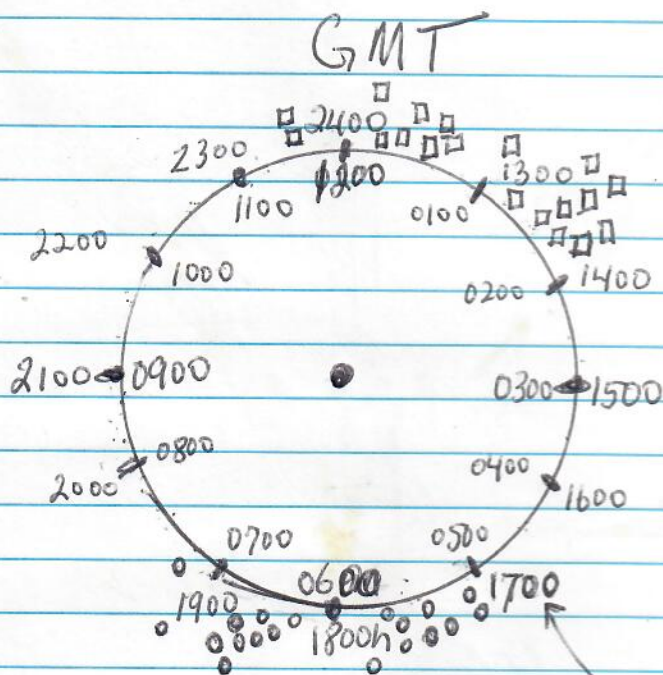
See p. 4 - 25692 > 3 on/9 off for 39 days  
25693 >

then 3 on/3 off

OCT, 95

□ = NOAA-14

○ = NOAA-12



Need "ON"

GMT 1700 or 0500

A.S.T. = GMT minus 11 hours

∴ 0600 or 1800h Local Time  
6 AM or 6 PM

25694  
AVL0TV

25694 Date : 27.02.96 01:37:26 LC : B IQ : 00  
Lat1 : 17.738S Lon1 : 178.651E  
191 30 276 76  
00 00

25694 Date : 28.02.96 06:35:07 LC : 3 IQ : 60  
Lat1 : 17.814S Lon1 : 178.651E  
189 06 213 100  
00 01

25694 Date : 28.02.96 12:42:28 LC : B IQ : 00  
Lat1 : 17.805S Lon1 : 178.660E  
188 886 213 100

25694 Date : 28.02.96 17:45:51 LC : A IQ : 08  
Lat1 : 17.833S Lon1 : 178.646E  
184 949 266 1172  
00 04

TO P. 106

14.5°

GEORGE MENZIES TIDE GAUGE

A95

South 168.1 DEGREES WEST

date	object	beacon	rise	tca	set
Thu 19Oct95	NOAA-14	1707.0000	00:01:08	00:08:04	00:14
Thu 19Oct95	NOAA-14	1707.0000	01:41:11	01:48:37	01:56
Thu 19Oct95	NOAA-10	1698.0000	03:45:23	03:51:36	03:57
Thu 19Oct95	NOAA-12	1698.0000	04:30:30	04:31:18	04:32
Thu 19Oct95	NOAA-11	1707.0000	05:00:43	05:08:31	05:16
Thu 19Oct95	NOAA-10	1698.0000	05:24:07	05:31:20	05:38
Thu 19Oct95	NOAA-12	1698.0000	06:03:51	06:11:27	06:19
Thu 19Oct95	NOAA-11	1707.0000	06:42:43	06:48:38	06:54
Thu 19Oct95	NOAA-12	1698.0000	07:45:42	07:50:56	07:56
Thu 19Oct95	NOAA-14	1707.0000	11:15:27	11:20:45	11:26
Thu 19Oct95	NOAA-14	1707.0000	12:53:06	13:00:56	13:08
Thu 19Oct95	NOAA-14	1707.0000	14:39:39	14:41:47	14:43
Thu 19Oct95	NOAA-10	1698.0000	14:54:32	14:58:12	15:01
Thu 19Oct95	NOAA-11	1707.0000	16:13:02	16:20:09	16:27
Thu 19Oct95	NOAA-10	1698.0000	16:29:47	16:37:22	16:44
Thu 19Oct95	NOAA-12	1698.0000	17:11:43	17:18:42	17:25
Thu 19Oct95	NOAA-11	1707.0000	17:53:25	18:00:30	18:07
Thu 19Oct95	NOAA-10	1698.0000	18:13:07	18:17:16	18:21
Thu 19Oct95	NOAA-12	1698.0000	18:51:35	18:58:29	19:05
Thu 19Oct95	NOAA-14	1707.0000	23:50:46	23:57:13	00:03
Thu 19Oct95	passes =	20			
Fri 20Oct95	NOAA-14	1707.0000	01:30:11	01:37:51	01:45
Fri 20Oct95	NOAA-10	1698.0000	03:22:43	03:27:26	03:32
Fri 20Oct95	NOAA-11	1707.0000	04:48:33	04:56:10	05:03
Fri 20Oct95	NOAA-10	1698.0000	04:59:45	05:07:18	05:14
Fri 20Oct95	NOAA-12	1698.0000	05:42:23	05:49:42	05:57
Fri 20Oct95	NOAA-11	1707.0000	06:29:51	06:36:23	06:42
Fri 20Oct95	NOAA-10	1698.0000	06:43:42	06:46:24	06:49
Fri 20Oct95	NOAA-12	1698.0000	07:23:00	07:29:22	07:35
Fri 20Oct95	NOAA-14	1707.0000	11:05:40	11:10:02	11:14
Fri 20Oct95	NOAA-14	1707.0000	12:42:15	12:50:07	12:57
Fri 20Oct95	NOAA-14	1707.0000	14:26:55	14:30:55	14:34
Fri 20Oct95	NOAA-11	1707.0000	16:01:11	16:07:52	16:14
Fri 20Oct95	NOAA-10	1698.0000	16:05:54	16:13:20	16:20
Fri 20Oct95	NOAA-12	1698.0000	16:50:57	16:57:05	17:03
Fri 20Oct95	NOAA-11	1707.0000	17:40:44	17:48:08	17:55
Fri 20Oct95	NOAA-10	1698.0000	17:47:06	17:53:06	17:59
Fri 20Oct95	NOAA-12	1698.0000	18:29:19	18:36:43	18:44
Fri 20Oct95	NOAA-14	1707.0000	23:40:32	23:46:21	23:52
Fri 20Oct95	passes =	18			
Sat 21Oct95	NOAA-14	1707.0000	01:19:15	01:27:03	01:34

1995

97

Sat 21Oct95	NOAA-14	1707.0000	03:05:46	03:06:54	03:08	0
Sat 21Oct95	NOAA-10	1698.0000	04:35:43	04:43:14	04:50	61
Sat 21Oct95	NOAA-11	1707.0000	04:36:28	04:43:48	04:51	28
Sat 21Oct95	NOAA-12	1698.0000	05:21:13	05:27:56	05:34	20
Sat 21Oct95	NOAA-11	1707.0000	06:17:07	06:24:08	06:31	22
Sat 21Oct95	NOAA-10	1698.0000	06:17:23	06:22:35	06:27	8
Sat 21Oct95	NOAA-12	1698.0000	07:00:41	07:07:45	07:14	X 29
Sat 21Oct95	NOAA-14	1707.0000	10:56:20	10:59:21	11:02	2
Sat 21Oct95	NOAA-14	1707.0000	12:31:29	12:39:18	12:47	70
Sat 21Oct95	NOAA-14	1707.0000	14:14:58	14:20:03	14:25	7
Sat 21Oct95	NOAA-10	1698.0000	15:42:29	15:49:21	15:56	23
Sat 21Oct95	NOAA-11	1707.0000	15:49:30	15:55:37	16:01	13
Sat 21Oct95	NOAA-12	1698.0000	16:30:46	16:35:32	16:40	7
Sat 21Oct95	NOAA-10	1698.0000	17:22:00	17:28:57	17:35	25
Sat 21Oct95	NOAA-11	1707.0000	17:28:10	17:35:47	17:43	46
Sat 21Oct95	NOAA-12	1698.0000	18:07:22	18:14:58	18:22	73
Sat 21Oct95	NOAA-12	1698.0000	19:52:35	19:55:06	19:57	1
Sat 21Oct95	NOAA-14	1707.0000	23:30:30	23:35:30	23:40	7

Sat 21Oct95 passes = 19

Sun 22Oct95	NOAA-14	1707.0000	01:08:22	01:16:16	01:24	74
Sun 22Oct95	NOAA-14	1707.0000	02:52:45	02:56:13	02:59	3
Sun 22Oct95	NOAA-10	1698.0000	04:11:59	04:19:08	04:26	31
Sun 22Oct95	NOAA-11	1707.0000	04:24:29	04:31:26	04:38	20
Sun 22Oct95	NOAA-12	1698.0000	05:00:24	05:06:08	05:11	10
Sun 22Oct95	NOAA-10	1698.0000	05:52:15	05:58:40	06:05	18
Sun 22Oct95	NOAA-11	1707.0000	06:04:29	06:11:51	06:19	30
Sun 22Oct95	NOAA-12	1698.0000	06:38:34	06:46:05	06:53	X 51
Sun 22Oct95	NOAA-14	1707.0000	12:20:47	12:28:30	12:36	52
Sun 22Oct95	NOAA-14	1707.0000	14:03:20	14:09:11	14:15	11
Sun 22Oct95	NOAA-10	1698.0000	15:19:34	15:25:25	15:31	12
Sun 22Oct95	NOAA-11	1707.0000	15:38:06	15:43:23	15:48	9
Sun 22Oct95	NOAA-12	1698.0000	16:12:03	16:14:03	16:16	1
Sun 22Oct95	NOAA-10	1698.0000	16:57:24	17:04:50	17:12	46
Sun 22Oct95	NOAA-11	1707.0000	17:15:42	17:23:26	17:31	65
Sun 22Oct95	NOAA-12	1698.0000	17:45:39	17:53:16	18:00	X 63
Sun 22Oct95	NOAA-11	1707.0000	19:02:39	19:04:10	19:05	1
Sun 22Oct95	NOAA-12	1698.0000	19:28:08	19:33:16	19:38	8
Sun 22Oct95	NOAA-14	1707.0000	23:20:49	23:24:38	23:28	3

Sun 22Oct95 passes = 19

Mon 23Oct95	NOAA-14	1707.0000	00:57:33	01:05:27	01:13	84
Mon 23Oct95	NOAA-14	1707.0000	02:40:53	02:45:32	02:50	6

Mon	23Oct95	NOAA-10	1698.0000	03:48:41	03:55:00	04:02
Mon	23Oct95	NOAA-11	1707.0000	04:12:39	04:19:04	04:25
Mon	23Oct95	NOAA-12	1698.0000	04:40:30	04:44:18	04:48
Mon	23Oct95	NOAA-10	1698.0000	05:27:34	05:34:42	05:41
Mon	23Oct95	NOAA-11	1707.0000	05:51:57	05:59:33	06:07
Mon	23Oct95	NOAA-12	1698.0000	06:16:44	06:24:24	06:32
Mon	23Oct95	NOAA-12	1698.0000	07:59:39	08:03:44	08:07
Mon	23Oct95	NOAA-14	1707.0000	12:10:10	12:17:42	12:25
Mon	23Oct95	NOAA-14	1707.0000	13:51:54	13:58:20	14:04
Mon	23Oct95	NOAA-10	1698.0000	14:57:31	15:01:34	15:05
Mon	23Oct95	NOAA-11	1707.0000	15:26:56	15:31:10	15:35
Mon	23Oct95	NOAA-10	1698.0000	16:33:11	16:40:46	16:48
Mon	23Oct95	NOAA-11	1707.0000	17:03:19	17:11:06	17:18
Mon	23Oct95	NOAA-12	1698.0000	17:24:17	17:31:35	17:38
Mon	23Oct95	NOAA-10	1698.0000	18:16:58	18:20:41	18:24
Mon	23Oct95	NOAA-11	1707.0000	18:47:51	18:51:46	18:55
Mon	23Oct95	NOAA-12	1698.0000	19:05:04	19:11:27	19:17
Mon	23Oct95	NOAA-14	1707.0000	23:12:07	23:13:46	23:15

Mon 23Oct95 passes = 20

Tue	24Oct95	NOAA-14	1707.0000	00:46:46	00:54:38	01:02
Tue	24Oct95	NOAA-14	1707.0000	02:29:20	02:34:49	02:40
Tue	24Oct95	NOAA-10	1698.0000	03:25:54	03:30:50	03:35
Tue	24Oct95	NOAA-11	1707.0000	04:01:00	04:06:41	04:12
Tue	24Oct95	NOAA-10	1698.0000	05:03:10	05:10:41	05:18
Tue	24Oct95	NOAA-11	1707.0000	05:39:29	05:47:15	05:55
Tue	24Oct95	NOAA-12	1698.0000	05:55:08	06:02:40	06:10
Tue	24Oct95	NOAA-10	1698.0000	06:47:48	06:49:45	06:51
Tue	24Oct95	NOAA-11	1707.0000	07:25:17	07:26:58	07:28
Tue	24Oct95	NOAA-12	1698.0000	07:36:29	07:42:13	07:47
Tue	24Oct95	NOAA-14	1707.0000	11:59:37	12:06:55	12:14
Tue	24Oct95	NOAA-14	1707.0000	13:40:36	13:47:28	13:54
Tue	24Oct95	NOAA-11	1707.0000	15:16:24	15:18:58	15:21
Tue	24Oct95	NOAA-10	1698.0000	16:09:15	16:16:44	16:24
Tue	24Oct95	NOAA-11	1707.0000	16:51:02	16:58:46	17:06
Tue	24Oct95	NOAA-12	1698.0000	17:03:16	17:09:57	17:16
Tue	24Oct95	NOAA-10	1698.0000	17:50:44	17:56:31	18:02
Tue	24Oct95	NOAA-11	1707.0000	18:34:14	18:39:22	18:44
Tue	24Oct95	NOAA-12	1698.0000	18:42:33	18:49:40	18:56

Tue 24Oct95 passes = 19

Wed	25Oct95	NOAA-14	1707.0000	00:36:03	00:43:49	00:51
Wed	25Oct95	NOAA-14	1707.0000	02:17:58	02:24:06	02:30

Wed 25Oct95	NOAA-10	1698.0000	03:05:17	03:06:39	03:08	1
Wed 25Oct95	NOAA-11	1707.0000	03:49:38	03:54:18	03:58	6
Wed 25Oct95	NOAA-10	1698.0000	04:39:05	04:46:38	04:54	67
Wed 25Oct95	NOAA-11	1707.0000	05:27:05	05:34:56	05:42	80
Wed 25Oct95	NOAA-12	1698.0000	05:33:47	05:40:54	05:48	X28
Wed 25Oct95	NOAA-10	1698.0000	06:21:00	06:25:56	06:30	7
Wed 25Oct95	NOAA-11	1707.0000	07:10:57	07:14:47	07:18	4
Wed 25Oct95	NOAA-12	1698.0000	07:13:56	07:20:38	07:27	X21
Wed 25Oct95	NOAA-14	1707.0000	11:49:10	11:56:09	12:03	(23)
Wed 25Oct95	NOAA-14	1707.0000	13:29:25	13:36:38	13:43	(27)
Wed 25Oct95	NOAA-10	1698.0000	15:45:46	15:52:44	15:59	26
Wed 25Oct95	NOAA-11	1707.0000	16:38:55	16:46:27	16:53	48
Wed 25Oct95	NOAA-12	1698.0000	16:42:42	16:48:22	16:54	11
Wed 25Oct95	NOAA-10	1698.0000	17:25:32	17:32:22	17:39	22
Wed 25Oct95	NOAA-12	1698.0000	18:20:25	18:27:55	18:35	X51
Wed 25Oct95	NOAA-11	1707.0000	18:21:01	18:26:59	18:32	12

Wed 25Oct95 passes = 18

Thu 26Oct95	NOAA-14	1707.0000	00:25:24	00:32:59	00:40	(36)
Thu 26Oct95	NOAA-14	1707.0000	02:06:43	02:13:21	02:19	17
Thu 26Oct95	NOAA-11	1707.0000	03:38:45	03:41:54	03:45	2
Thu 26Oct95	NOAA-10	1698.0000	04:15:18	04:22:32	04:29	34
Thu 26Oct95	NOAA-12	1698.0000	05:12:41	05:19:07	05:25	16
Thu 26Oct95	NOAA-11	1707.0000	05:14:41	05:22:36	05:30	75
Thu 26Oct95	NOAA-10	1698.0000	05:55:46	06:02:03	06:08	16
Thu 26Oct95	NOAA-12	1698.0000	06:51:40	06:59:00	07:06	X36
Thu 26Oct95	NOAA-11	1707.0000	06:57:31	07:02:35	07:07	7
Thu 26Oct95	NOAA-14	1707.0000	11:38:53	11:45:24	11:51	17
Thu 26Oct95	NOAA-14	1707.0000	13:18:20	13:25:47	13:33	(35)
Thu 26Oct95	NOAA-10	1698.0000	15:22:46	15:28:48	15:34	14
Thu 26Oct95	NOAA-12	1698.0000	16:22:49	16:26:50	16:30	4
Thu 26Oct95	NOAA-11	1707.0000	16:26:46	16:34:09	16:41	34
Thu 26Oct95	NOAA-10	1698.0000	17:00:52	17:08:15	17:15	42
Thu 26Oct95	NOAA-12	1698.0000	17:58:31	18:06:11	18:13	89
Thu 26Oct95	NOAA-11	1707.0000	18:07:58	18:14:36	18:21	17
Thu 26Oct95	NOAA-12	1698.0000	19:42:24	19:46:16	19:50	4

Thu 26Oct95 passes = 18

Fri 27Oct95	NOAA-14	1707.0000	00:14:49	00:22:08	00:29	(27)
Fri 27Oct95	NOAA-14	1707.0000	01:55:35	02:02:36	02:09	(23)
Fri 27Oct95	NOAA-10	1698.0000	03:51:57	03:58:24	04:04	18
Fri 27Oct95	NOAA-12	1698.0000	04:52:11	04:57:19	05:02	8
Fri 27Oct95	NOAA-11	1707.0000	05:02:26	05:10:16	05:18	54

Fri 27Oct95	NDAA-10	1698.0000	05:31:02	05:38:05	05:45
Fri 27Oct95	NDAA-12	1698.0000	06:29:42	06:37:19	06:44
Fri 27Oct95	NDAA-11	1707.0000	06:44:28	06:50:22	06:56
Fri 27Oct95	NDAA-12	1698.0000	08:14:17	08:16:32	08:18
Fri 27Oct95	NDAA-14	1707.0000	11:28:39	11:34:39	11:40
Fri 27Oct95	NDAA-14	1707.0000	13:07:19	13:14:57	13:22
Fri 27Oct95	NDAA-10	1698.0000	15:00:32	15:04:56	15:09
Fri 27Oct95	NDAA-11	1707.0000	16:14:44	16:21:51	16:28
Fri 27Oct95	NDAA-10	1698.0000	16:36:36	16:44:10	16:51
Fri 27Oct95	NDAA-12	1698.0000	17:36:59	17:44:29	17:51
Fri 27Oct95	NDAA-11	1707.0000	17:55:09	18:02:13	18:09
Fri 27Oct95	NDAA-10	1698.0000	18:20:54	18:24:07	18:27
Fri 27Oct95	NDAA-12	1698.0000	19:18:44	19:24:26	19:30

Fri 27Oct95 passes = 18

Sat 28Oct95	NDAA-14	1707.0000	00:04:15	00:11:18	00:18
Sat 28Oct95	NDAA-14	1707.0000	01:44:27	01:51:50	01:59
Sat 28Oct95	NDAA-10	1698.0000	03:29:01	03:34:14	03:39
Sat 28Oct95	NDAA-12	1698.0000	04:33:03	04:35:29	04:37
Sat 28Oct95	NDAA-11	1707.0000	04:50:16	04:57:54	05:05
Sat 28Oct95	NDAA-10	1698.0000	05:06:35	05:14:04	05:21
Sat 28Oct95	NDAA-12	1698.0000	06:07:58	06:15:37	06:23
Sat 28Oct95	NDAA-11	1707.0000	06:31:36	06:38:07	06:44
Sat 28Oct95	NDAA-10	1698.0000	06:52:41	06:53:06	06:53
Sat 28Oct95	NDAA-12	1698.0000	07:50:10	07:55:03	07:59
Sat 28Oct95	NDAA-14	1707.0000	11:18:30	11:23:55	11:29
Sat 28Oct95	NDAA-14	1707.0000	12:56:20	13:04:08	13:11
Sat 28Oct95	NDAA-14	1707.0000	14:43:54	14:45:00	14:46
Sat 28Oct95	NDAA-11	1707.0000	16:02:57	16:09:35	16:16
Sat 28Oct95	NDAA-10	1698.0000	16:12:37	16:20:07	16:27
Sat 28Oct95	NDAA-12	1698.0000	17:15:44	17:22:49	17:29
Sat 28Oct95	NDAA-11	1707.0000	17:42:28	17:49:51	17:57
Sat 28Oct95	NDAA-10	1698.0000	17:54:23	17:59:56	18:05
Sat 28Oct95	NDAA-12	1698.0000	18:55:55	19:02:38	19:09
Sat 28Oct95	NDAA-14	1707.0000	23:53:51	00:00:27	00:07

Sat 28Oct95 passes = 20

Sun 29Oct95	NDAA-14	1707.0000	01:33:26	01:41:04	01:48
Sun 29Oct95	NDAA-10	1698.0000	03:07:40	03:10:03	03:12
Sun 29Oct95	NDAA-11	1707.0000	04:38:11	04:45:33	04:52
Sun 29Oct95	NDAA-10	1698.0000	04:42:28	04:50:01	04:57
Sun 29Oct95	NDAA-12	1698.0000	05:46:27	05:53:52	06:01
Sun 29Oct95	NDAA-11	1707.0000	06:18:51	06:25:52	06:32



date	object	beacon	rise	tca	set	el
Sun 29Oct95	NOAA-10	1698.0000	06:24:39	06:29:18	06:33	6
Sun 29Oct95	NOAA-12	1698.0000	07:27:18	07:33:29	07:39	15
Sun 29Oct95	NOAA-14	1707.0000	11:08:39	11:13:12	11:17	6
Sun 29Oct95	NOAA-14	1707.0000	12:45:28	12:53:19	13:04	83
Sun 29Oct95	NOAA-14	1707.0000	14:30:31	14:34:08	14:37	3
Sun 29Oct95	NOAA-10	1698.0000	15:49:04	15:56:07	16:03	28
Sun 29Oct95	NOAA-11	1707.0000	15:51:16	15:57:19	16:03	13
Sun 29Oct95	NOAA-12	1698.0000	16:54:53	17:01:12	17:07	16
Sun 29Oct95	NOAA-10	1698.0000	17:29:05	17:35:47	17:42	20
Sun 29Oct95	NOAA-11	1707.0000	17:29:53	17:37:30	17:45	46
Sun 29Oct95	NOAA-12	1698.0000	18:33:34	18:40:52	18:48	X 36
Sun 29Oct95	NOAA-14	1707.0000	23:43:34	23:49:36	23:55	11

From 25693 SALEI

25693 Date : 09.02.96 19:39:24 LC : A IQ : 00  
 Lat1 : 16.829S Lon1 : 179.202E  
 184 93 345 60  
 00 00

25693 Date : 10.02.96 01:16:37 LC : A IQ : 08  
 Lat1 : 16.796S Lon1 : 179.384E  
 185 08 345 60  
 00 00

25693 Date : 10.02.96 06:29:30 LC : A IQ : 08  
 Lat1 : 16.826S Lon1 : 179.196E  
 184 170 267 76  
 02 16

25693 Date : 11.02.96 17:14:35 LC : B IQ : 00  
 Lat1 : 16.820S Lon1 : 179.229E  
 32 9449 276 55  
 00 04

25693 Date : 11.02.96 18:51:18 LC : A IQ : 00  
 Lat1 : 16.846S Lon1 : 179.277E  
 184 89 33269 25139  
 00 16

25693 Date : 12.02.96 13:55:35 LC : A IQ : 00  
 Lat1 : 16.835S Lon1 : 179.236E  
 183 1344 233 85  
 00 00

25693 Date : 12.02.96 18:32:18 LC : B IQ : 00  
 Lat1 : 16.815S Lon1 : 179.192E  
 183 401 429 48  
 00 00

25693 Date : 13.02.96 18:06:51 LC : B IQ : 00  
 Lat1 : 16.822S Lon1 : 179.218E  
 184 134 532 166  
 00 16

TO p. 108

CONT.  
FROM  
P. 74

25692 Date : 22.01.96 17:53:37 LC : (A) IQ : 00  
Lat1 : 16.670S Lon1 : 179.824W  
177 23 341 63  
00 00

25692 Date : 25.01.96 13:51:01 LC : (B) IQ : 00  
Lat1 : 16.669S Lon1 : 179.669E  
177 239 200 105  
00 00

25692 Date : 27.01.96 06:30:57 LC : (1) IQ : 60  
Lat1 : 16.695S Lon1 : 179.937W  
179 06 160 131  
00 00

25692 Date : 28.01.96 01:55:18 LC : B IQ : 00  
Lat1 : 17.037S Lon1 : 177.865E Lat2 : 15.313S Lon2 : 177.865W  
180 173 303 70  
00 00

25692 Date : 29.01.96 01:54:25 LC : (B) IQ : 00  
Lat1 : 16.649S Lon1 : 179.914W Lat2 : 15.550S Lon2 : 177.865W  
177 1587 259 82  
00 00

25692 Date : 29.01.96 13:06:00 LC : B IQ : 00  
Lat1 : 16.723S Lon1 : 179.775W  
178 1354 525 2206  
00 00

25692 Date : 31.01.96 01:28:07 LC : (A) IQ : 00  
Lat1 : 16.694S Lon1 : 179.914W  
188 13 146 17354  
03 13

25692 Date : 01.02.96 19:12:47 LC : (1) IQ : 50  
Lat1 : 16.667S Lon1 : 179.866W  
221 11968 53969 42705  
02 42

25692 Date : 02.02.96 01:05:58 LC : (2) IQ : 68  
Lat1 : 16.676S Lon1 : 179.890W  
183 06 413 52  
00 01

25692 Date : 06.02.96 19:07:15 LC : B IQ : 00  
Lat1 : 16.641S Lon1 : 179.606W  
179 5272 34179 52658  
02 14

25692 Date : 08.02.96 01:45:32 LC : B IQ : 00  
Lat1 : 16.661S Lon1 : 179.954W  
181 565 26974 32850  
00 00

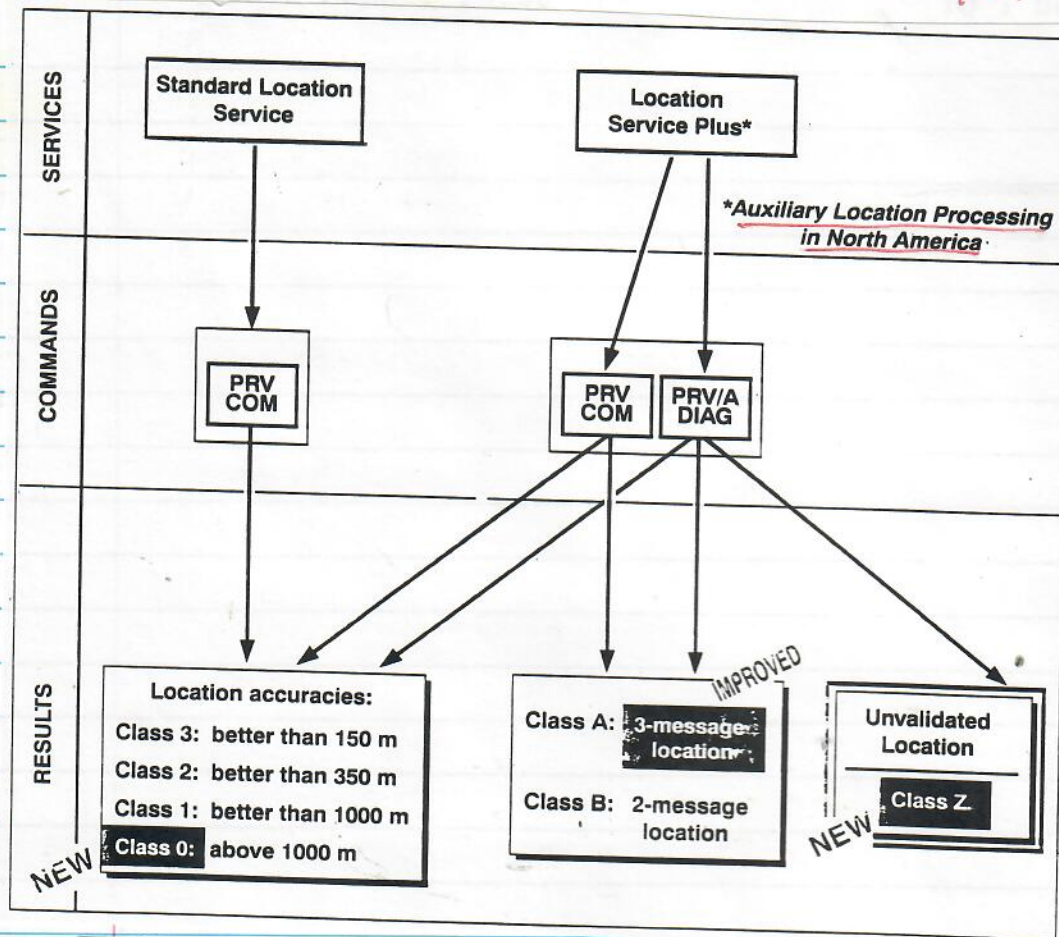
25692 Date : 09.02.96 19:39:29 LC : (1) IQ : 60  
Lat1 : 16.666S Lon1 : 179.861W  
179 06 617 37  
00 00

25692 Date : 11.02.96 18:53:51 LC : B IQ : 00  
Lat1 : 16.669S Lon1 : 179.867W  
180 128 331 65  
00 00

25692  
LELUPA

# New Argos Location

As of  
6/94



"Class A"  
25692

25692 Date : 12.02.96 18:29:02 LC : B IQ : 00  
 Lat1 : 16.674S Lon1 : 179.836W  
 179 10 458 47  
 00 01

25692 Date : 13.02.96 00:48:04 LC : B IQ : 00  
 Lat1 : 16.704S Lon1 : 179.856W  
 180 628 458 47  
 02 05

+

25692 Date : 23.02.96 17:53:44 LC : A IQ : 00  
 Lat1 : 16.677S Lon1 : 179.869W  
 178 103 333 63  
 00 00

25692 Date : 24.02.96 19:09:16 LC : A IQ : 00  
 Lat1 : 16.664S Lon1 : 179.840W  
 179 6197 18863 1913  
 02 53

25692 Date : 06.03.96 01:52:58 LC : B IQ : 00  
 Lat1 : 16.633S Lon1 : 179.697W  
 181 565 462 46  
 00 00

25692  
"61WA"

25692 Date : 10.03.96 01:07:11 LC : Z IQ : 00  
Lat1 : ???????? Lon1 : ????????  
184 42 395 54  
00 00

25692 Date : 11.03.96 00:57:06 LC : Z IQ : 00  
Lat1 : ???????? Lon1 : ????????  
184 260 239 89  
00 00

25692 Date : 12.03.96 13:36:28 LC : B IQ : 00

Lat1 : 16.502S Lon1 : 179.145E Lat2 : 16.942S Lon2 : 178.888W  
179 961 110 191  
00 00

25692 Date : 16.03.96 18:13:12 LC : B IQ : 00  
Lat1 : 16.647S Lon1 : 179.888W  
179 109 10461 22976  
00 08

25692 Date : 16.03.96 19:54:03 LC : 0 IQ : 50  
Lat1 : 16.661S Lon1 : 179.897W  
180 05 140 152  
00 01

25692 Date : 18.03.96 01:22:22 LC : B IQ : 00  
Lat1 : 16.714S Lon1 : 179.841W  
185 17 207 102  
00 01

25692 Date : 24.03.96 01:56:29 LC : Z IQ : 00  
Lat1 : ???????? Lon1 : ????????  
186 13 218 96  
00 01

25692 Date : 26.03.96 01:37:11 LC : A IQ : 00  
Lat1 : 16.673S Lon1 : 179.979W  
180 1165 316 68  
00 00

25692 Date : 08.04.96 07:02:54 LC : Z IQ : 00  
Lat1 : ???????? Lon1 : ????????  
180 13344 48354 1333  
01 36

25692 Date : 26.04.96 18:22:05 LC : Z IQ : 00  
Lat1 : ???????? Lon1 : ????????  
177 339 2399 09  
00 00

Need  
to  
Plot

25692 Date : 22.05.96 01:20:22 LC : 3 IQ : 60  
Lat1 : 16.635S Lon1 : 179.798W  
183 121 183 117  
00 00

16.635S  
179.798W

25692 Date : 14.06.96 13:30:44 LC : Z IQ : 00  
Lat1 : ???????? Lon1 : ????????  
173 515 213 99  
00 02

25692 Date : 15.06.96 05:37:59 LC : Z IQ : 00  
Lat1 : ??????? Lon1 : ???????  
175 299 31 598  
00 00

25692 Date : 15.06.96 13:14:13 LC : Z IQ : 00  
Lat1 : ??????? Lon1 : ???????  
174 1265 31 598  
00 00

25692 Date : 15.06.96 18:26:55 LC : Z IQ : 00  
Lat1 : ??????? Lon1 : ???????  
174 25 249 84  
00 00

25692 Date : 16.06.96 01:51:12 LC : Z IQ : 00  
Lat1 : ??????? Lon1 : ???????  
178 27 249 84  
00 01

NOV.93 4807, 4808, 4809  
SUMMARIES

Deployed  
ROSE IS.  
RELEASED

CCL TAGS DEPART ROSE DISTANCE TRAVELED ARRIVE FIJI

11/3/93 107cm  
1:45pm

K604-  
K607

12/30/94 784 NM  
(1450 km)

1/23/94

NATEVA BAY  
(UNDU POINT)  
VANUA LEVU  
(814 hours  
OR 34 DAYS)

4808

[AT ROSE  
FOR 47 days  
AFTER  
DEPLOYMENT  
BEFORE DEPARTURE

1.8 KM/HR  
1.0 NM/HR

11/3/93  
5:35pm  
4809

CCL =  
96.5cm

K602-  
K603,  
K608-  
K609

12/27/94  
[AT ROSE  
54 days  
AFTER  
DEPLOYMENT  
BEFORE  
FINAL DEPARTURE

2/10/94  
944 NM

(1750 km)  
NAWENT  
POINT,  
VANUA  
LEVU

(1080  
hours  
OR  
45  
DAYS)

1.6 KM/HR  
0.9 NM/HR

see additional data

[10 day excursion  
South] 33 NM

11/4/93  
11:35am  
4807

CCL =  
100cm  
(FLATTISH)

1/15/94

OR TO THE  
60 KM South

K613-  
K616

[AT ROSE  
72 days  
AFTER  
DEPLOYMENT  
BEFORE  
DEPARTURE

KM/HR  
NM/HR

25694  
AULOTU  
from  
p.95

25694 Date : 29.02.96 06:16:04 LC : B IQ : 00  
Lat1 : 17.789S Lon1 : 178.585E  
100 83 121 174  
00 00

25694 Date : 29.02.96 17:20:31 LC : B IQ : 00  
Lat1 : 17.872S Lon1 : 178.692E  
186 634 177 115  
00 00

25694 Date : 01.03.96 07:31:16 LC : B IQ : 00  
Lat1 : 17.633S Lon1 : 178.370E  
188 56 151 138  
00 00

1993

NOV = 30 days  
DEC = 31 days  
JAN = 31 days

$$6076' = 1 \text{ NM} = 1.852 \text{ KM}$$

4808

STRAIGHTLINE ROSE = 720 NM = 1335 KM  
(DIRECT) TO  
NATEVA BAY, VANUA LEVU

FIJI

4809

STRAIGHTLINE ROSE = 760 NM = 1410 KM  
TO  
NAWENI Pt., VANUA LEVU

4809

BETWEEN

FIJI

240 hours

11/25/93 - 12/5/93

[10 days]

→ 22 DAYS AFTER DEPLOYMENT, left ROSE 11/25 for

1.3 KM/HR  
0.7 NM/HR

10 day "Figure 8" excursion south 162 NM (300 KM),

Returning to ROSE 12/5/93. Then 22 days later

FINAL DEPARTURE FROM ROSE ON 12/27/93.

4807

STRAIGHTLINE ROSE =

TO CAU

25694 Date : 02.03.96 18:21:05 LC : B IQ : 00  
Lat1 : 17.854S Lon1 : 178.577E

186 116 211 97  
00 00

25694 Date : 03.03.96 06:49:49 LC : A IQ : 00

Lat1 : 15.319S Lon1 : 169.938W Lat2 : 17.818S Lon2 : 178.651E

186 64 126 166  
00 00

25694 Date : 03.03.96 13:34:02 LC : B IQ : 00

Lat1 : 17.833S Lon1 : 179.054E

186 387 126 166  
00 02

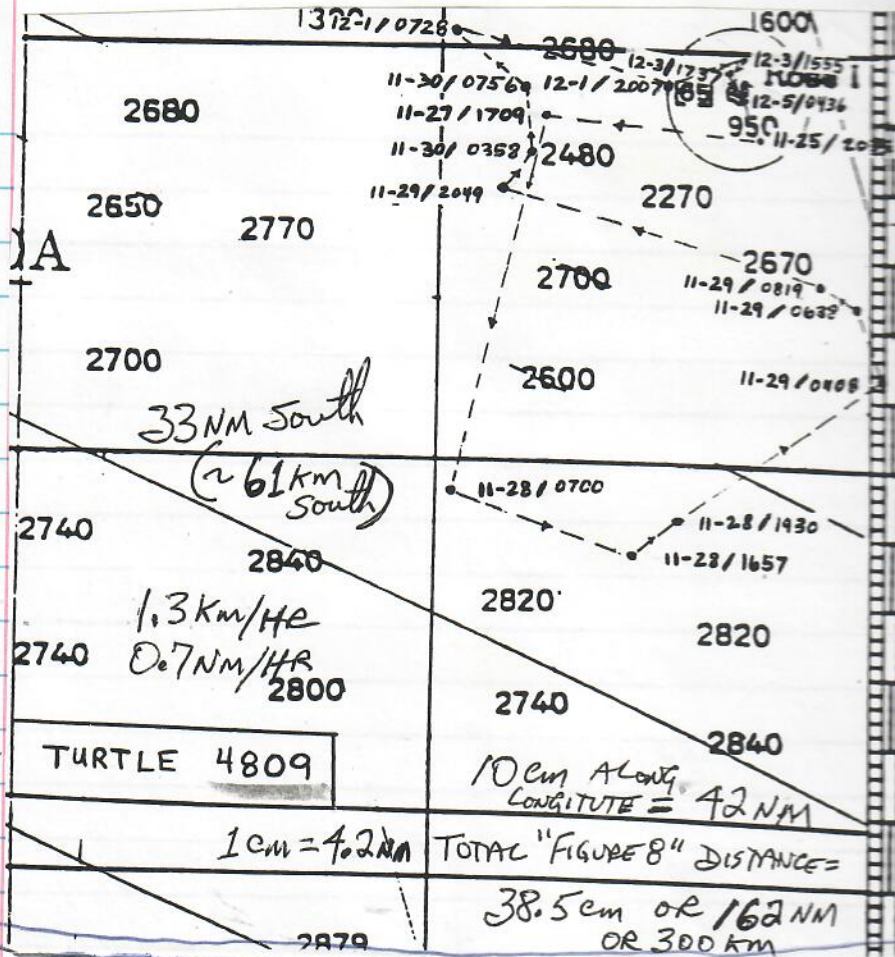
25694 Date : 04.03.96 06:30:48 LC : B IQ : 00

Lat1 : 17.847S Lon1 : 178.557E

187 69 96 216  
00 00

TO P.115

25694  
AVLOTV



4809  
1993  
Deployment

Isatei  
25693  
Continued  
from  
Page  
101

25693 Date : 14.02.96 19:29:51 LC : B IQ : 00

Lat1 : 16.847S Lon1 : 179.225E  
183 02 375 36012  
02 02

25693 Date : 15.02.96 06:16:44 LC : A IQ : 00

Lat1 : 16.855S Lon1 : 179.078E  
184 24900 33425 2236  
02 17

25693 Date : 15.02.96 19:04:27 LC : B IQ : 00

Lat1 : 16.732S Lon1 : 179.103E  
184 452 554 37  
00 00

25693 Date : 16.02.96 01:56:24 LC : B IQ : 00

Lat1 : 16.812S Lon1 : 179.214E  
187 1179 554 37  
00 00

25693 Date : 16.02.96 18:44:27 LC : Z IQ : 10

Lat1 : 17.129S Lon1 : 179.634W  
185 05 736 28  
00 08



25693  
ISALEI

25693 Date : 17.02.96 18:20:54 LC : B IQ : 00  
Lat1 : 16.781S Lon1 : 179.323E  
184 660 461 45  
00 00

25693 Date : 18.02.96 18:00:47 LC : B IQ : 00  
Lat1 : 16.763S Lon1 : 179.072E  
184 09 328 63  
00 01

25693 Date : 18.02.96 01:32:39 LC : 1 IQ : 50  
Lat1 : 16.804S Lon1 : 179.191F  
189 58 461 45  
00 00

25693 Date : 18.02.96 19:40:39 LC : B IQ : 00  
Lat1 : 16.801S Lon1 : 179.358E  
183 694 328 63  
00 00

25693 Date : 19.02.96 19:24:13 LC : B IQ : 00  
Lat1 : 16.862S Lon1 : 178.872E  
184 07 469 44  
00 01

25693 Date : 20.02.96 06:11:42 LC : A IQ : 00  
Lat1 : 16.819S Lon1 : 179.209E  
185 103 817 198  
00 32

25693 Date : 20.02.96 12:26:08 LC : A IQ : 08  
Lat1 : 16.893S Lon1 : 179.208E  
185 771 305 64  
00 00

25693 Date : 20.02.96 18:57:47 LC : 1 IQ : 58  
Lat1 : 16.858S Lon1 : 179.220E  
184 07 328 63  
00 01

25693 Date : 22.02.96 13:43:04 LC : B IQ : 00  
Lat1 : 16.945S Lon1 : 179.625E  
183 671 268 73  
00 00

25693 Date : 23.02.96 06:49:20 LC : 0 IQ : 50  
Lat1 : 16.812S Lon1 : 179.211E  
182 534 255 78  
00 00

25693 Date : 23.02.96 17:49:46 LC : B IQ : 00  
Lat1 : 16.802S Lon1 : 179.171E  
183 22 534 39  
00 00

25693 Date : 23.02.96 19:33:43 LC : A IQ : 00  
Lat1 : 16.822S Lon1 : 179.213E  
183 79 534 47  
00 16

25693 Date : 24.02.96 06:27:08 LC : B IQ : 00  
Lat1 : 16.818S Lon1 : 179.222E  
183 564 159 129  
00 01

25693 Date : 24.02.96 17:29:57 LC : A IQ : 00  
Lat1 : 16.764S Lon1 : 179.166E  
183 8214 386 3181  
02 34

110

"25693  
ISALE"

25693 Date : 25.02.96 18:51:09 LC : 0 IQ : 50  
Lat1 : 16.820S Lon1 : 179.205E

184 05 239 87  
00 00

25693 Date : 26.02.96 18:33:00 LC : A IQ : 00  
Lat1 : 16.787S Lon1 : 179.140E

183 12 236 88  
00 00

25693 Date : 27.02.96 18:04:55 LC : A IQ : 00  
Lat1 : 16.797S Lon1 : 179.151E

183 26 322 63  
00 00

25693 Date : 28.02.96 06:33:40 LC : B IQ : 00  
Lat1 : 16.842S Lon1 : 179.341E

185 49 131 149  
00 00

25693 Date : 28.02.96 12:44:33 LC : B IQ : 00  
Lat1 : 16.847S Lon1 : 179.190E

183 811 131 149  
00 00

25693 Date : 28.02.96 19:26:15 LC : B IQ : 00  
Lat1 : 16.831S Lon1 : 179.216E

185 911 243 84  
00 00

25693 Date : 29.02.96 01:17:17 LC : 1 IQ : 60  
Lat1 : 16.868S Lon1 : 179.230E

185 651 243 84  
00 00

25693 Date : 29.02.96 07:50:02 LC : B IQ : 00  
Lat1 : 16.552S Lon1 : 179.516E

184 08 310 62  
00 00

25693 Date : 02.03.96 00:53:41 LC : 0 IQ : 50  
Lat1 : 16.777S Lon1 : 179.137E

185 1076 182 110  
00 00

25693 Date : 03.03.96 06:50:16 LC : A IQ : 00  
Lat1 : 16.826S Lon1 : 179.199E

184 663 513 38  
00 00

25693 Date : 04.03.96 06:27:36 LC : 3 IQ : 60  
Lat1 : 16.826S Lon1 : 179.204E

185 40 246 79  
00 00

25693 Date : 04.03.96 13:24:45 LC : B IQ : 00  
Lat1 : 16.829S Lon1 : 179.235E

185 795 246 79  
00 00

25693 Date : 05.03.96 07:46:43 LC : B IQ : 00  
Lat1 : 16.831S Lon1 : 179.190E

184 871 510 37

25693 Date : 05.03.96 18:54:33 LC : A IQ : 00  
Lat1 : 16.815S Lon1 : 179.208E

184 4295 236 84  
00 00

25693  
"SALE"

25693 Date : 06.03.96 18:31:14 LC : B IQ : 00  
Lat1 : 16.817S Lon1 : 179.205E  
184 129 234 85  
00 00

25693 Date : 07.03.96 12:52:59 LC : B IQ : 00  
Lat1 : 16.817S Lon1 : 179.206E  
184 822 271 70  
00 00

25693 Date : 08.03.96 19:28:19 LC : A IQ : 00  
Lat1 : 16.819S Lon1 : 179.205E  
184 05 243 83  
00 00

25693 Date : 09.03.96 01:15:07 LC : A IQ : 08  
Lat1 : 16.793S Lon1 : 179.179E  
184 634 243 83  
00 00

25693 Date : 10.03.96 01:09:26 LC : 1 IQ : 60  
Lat1 : 16.841S Lon1 : 179.229E  
184 931 296 67  
00 00

25693 Date : 10.03.96 05:55:40 LC : B IQ : 00  
Lat1 : 16.825S Lon1 : 179.228E  
184 294 232 84  
00 01

25693 Date : 11.03.96 07:14:10 LC : B IQ : 00  
Lat1 : 16.829S Lon1 : 179.252E  
184 890 377 51  
00 00

25693 Date : 11.03.96 13:47:29 LC : B IQ : 00  
Lat1 : 16.918S Lon1 : 179.427E  
184 653 377 51  
00 00

25693 Date : 12.03.96 06:48:45 LC : Z IQ : 10  
Lat1 : 16.854S Lon1 : 179.114E  
184 07 264 73  
00 00

25693 Date : 12.03.96 13:36:52 LC : Z IQ : 10  
Lat1 : 17.366S Lon1 : 178.606W  
184 925 265 18521  
00 14

25693 Date : 13.03.96 06:34:14 LC : 1 IQ : 60  
Lat1 : 16.824S Lon1 : 179.185E  
184 869 222 89  
00 00

25693 Date : 13.03.96 13:32:58 LC : B IQ : 00  
Lat1 : 16.974S Lon1 : 179.437E  
184 1075 222 89  
00 00

25693 Date : 14.03.96 06:11:30 LC : B IQ : 00  
Lat1 : 16.843S Lon1 : 179.231E  
184 462 264 74  
00 00

25693 Date : 14.03.96 07:47:59 LC : B IQ : 00  
Lat1 : 16.845S Lon1 : 179.221E  
184 962 264 74

11

25693 Date : 07.03.96 06:59:58 LC : A IQ : 00  
Lat1 : 16.832S Lon1 : 179.218E  
183 17 271 70  
00 02

TOP.114

## Conclusion

The Fijian people to whom I spoke were keen to talk about sea turtles. Many admitted to killing sea turtles regardless of size and eating the eggs regardless of the legislation. This uncontrolled exploitation has been going on since the early nineteenth century when sea turtles became a marketable commodity, and the cash incentive conflicted with traditional utilisation of sea turtles. All admitted that there were fewer turtles now than they could remember from the days of their youth. They saw little correlation between their hunting practices and the decline, either real or imagined, in the number of sea turtles. As there were always some turtles to be had whenever they went hunting, and to the best of their knowledge the remote islands in Lau contained a bountiful supply of nesting turtles, they saw little need for concern.

Lack of information on the biology of sea turtles and their status in the Pacific allowed people to think that although scarce, sea turtles were not in danger of extinction because over the horizon on unnamed, remote islands, female turtles were continuing the supply of young turtles for market and for feasts.

### The Status of Nesting Populations

I searched for the remote, bountiful islands that supplied the country with sea turtles. "Should the islands north of Taveuni not support large nesting populations of Green turtles, then Fiji does not have such a resource" (D. Owens, in litt.) were the comments of Dr David Owens who spent two years on Bulia in the 1970s. My visits to Nanuku Levu, and the aerial survey of the islands of Northern Lau failed to find the rookeries. I estimate that fewer than 20 Green turtles nest on the islands of the Northern Lau group each year.

1980 and 1981 were years when above average Green turtle nesting occurred on the Great Barrier Reef, where the El Nino Southern Oscillation causes yearly variations in the nesting population (Limpus, pers. comm.). If the Fijian turtle population is subject to similar fluctuations, then in the years of my survey elevated numbers of nesting females could be expected. Given that each female may nest on three or four occasions at fortnightly intervals during summer, and that each clutch of eggs may number up to 120, around 10,000 Green turtle hatchlings enter Fijian waters each year.

Survival rates to maturity are anticipated to be about one in one thousand, which is a potential recruitment in 50 to 60 years time into the Fijian Green turtle population of 10 individuals, some of which will be males. In 1979 ten tonnes of green turtle meat were marketed in Fiji (FAO Statistics). Assuming that 30 kg of meat (a conservative estimate) were obtained from each animal, then the harvest is in the order of 300 to 400 adult individuals in 1979. The rate of harvesting is many times that of the recruitment rate.

The obvious question is "Where do these turtles come from?". A clue can be found in the tag recovery of sea turtles that were marked nesting in other Pacific Ocean countries. Sea turtles were tagged while nesting and feeding on Scilly Island, Society Islands, French Polynesia. Of the ten that were recaptured in Western Pacific countries (Pritchard, 1982), four were recaptured in Fiji; three from Vanuatu; two from New Caledonia and one from Tonga. A female Green, which was tagged while nesting on Scilly Island, was captured by Steno Vueta at Napuka, Vanua Levu, just 87 days after it was tagged 1725 miles to the east in French Polynesia (Wright, 1972). The Green turtles sold in the markets of the major towns in Fiji, in all likelihood, were hatched on the shores of other Pacific countries.

The shallow waters of Fiji provide a large and, in present times, under-utilised feeding ground for sea turtles. The sea grass pastures dominated by *Syringodium isoetifolium* along with *Halodule uninervis*, *H. pinifolia* and *Halophila ovalis* are of immense proportions and provide a feeding ground for Green turtles on trans-oceanic migrations.

The Fiji Group is in the path of the South Equatorial surface currents which have been associated with the biogeographical distribution of terrestrial iguanas and mangroves (Gibbons 1981). The currents flow from the North East into the Fiji Islands and pass through Bligh Water between Viti Levu and Vanua Levu. It is in this general area that Leatherback turtles are commonly seen. The numerous reefs and lagoons provide under utilised feeding space for subadult Green and Hawksbill turtles that may take up residence during their pre-reproductive years. The same lagoons and reefs provide food (molluscs and coral) for adult Hawksbills and Loggerheads.

The waters of Fiji provide an unoccupied habitat for any sea turtle that moves with or against the ocean currents into that area. Hence the sea turtles that are harvested in Fiji are probably migrating transients or new recruits to the sea grass and reef habitats.

The Green turtles that nest on the islands of the Ringgold and Heemskercq Reefs may represent the remnants of the indigenous gene pool or a mixture of endemics and migrants from other South Pacific countries. The genetic composition of the nesting Green turtles could be tested by modern techniques that trace maternal lineages, e.g. mitochondrial DNA studies. The same techniques could decipher the origin of the sea turtles that pass through the markets of Fiji. Regardless of their genetic origins, the turtles that nest in Fiji are Fiji's brood stock. They and their eggs should be protected, as they constitute the nucleus from which Green turtles could eventually increase in numbers.

The Hawksbill turtle has been heavily exploited for at least 150 years in Fiji. Many of the comments regarding the Green turtle apply also to this species. The annual breeding population of Hawksbills is probably in the order of 100 individuals. Using the same logic as applied to the Green turtle regarding recruitment, Fiji could expect a recruitment into the adult Hawksbill population of about 50 individuals in about 50 years time.

The export of "tortoise shell" from Fiji in 1987 was 2,008 kg, representing the harvesting of 2,000 to 3,000 adult individuals. Again, the harvest pressure is several times greater than the recruitment from native populations. The ban in 1990 on the export of unworked tortoise shell should reduce the hunting pressure on this species (Daly 1991).

The Leatherback turtle appears to be a migratory species in Fiji and should be given safe passage through the islands. Nesting is sporadic and opportunistic on those beaches that have a narrow fringing reef, such as along the southern Natewa Peninsula coast. This species is threatened with extinction on a global scale. The individuals that are caught and killed in Fiji are of curiosity value only to the villagers. If the Leatherback and its eggs were totally protected in Fiji then none of the coastal villages would be disadvantaged as this species is of neither commercial nor subsistence nutritional value. However, as *ika dina*, it holds great importance in Fijian culture and should not be killed.

### Recommendations

1. Fiji has in place excellent legislation regarding the harvesting of sea turtles. I recommend that the regulations be amended so that the Leatherback turtle and its eggs receive total protection throughout the year. This would grant this species freedom to pass through Fiji waters and nest unmolested.
2. The legislation should be enforced. The plan of action (Gentle 1979) highlighted the difficulties, particularly the lack of personnel.
3. I endorse the recommendation of Dr. Bustard (1970) that the islands of the Heemskercq Reef be made a turtle sanctuary. I propose that the islands of the Heemskercq Reef (Nanuku Levu and Nanuku Lailai) and the Ringgold Islands (Nukubasaga, Nukusemanu and Nukubalati) and their surrounding reefs be declared a marine park for preserving sea birds (Clunie 1985) and sea turtle nesting and feeding. The area is rich in history (named by Able Tasman in 1643) and contains the only known Green turtle rookery, as well as significant colonies of sea birds, e.g. red-footed gannets, brown gannets frigate birds and common noddies (Clunie 1985).

4. I urge the Chiefs and other land owners to consider placing prohibitions on the removal of sea turtles and their eggs from the islands and surrounding reefs. This would restore the importance of the *gone-dau ni ika* in modern Fijian society. This need not be a total ban, but may be lifted for ceremonial occasions or at intervals at the discretion of the owners and chiefs.

5. I urge the Government of Fiji to seek international aid for monitoring sea turtle populations within Fiji. Australia became a signatory to the "Convention on the Conservation of Migratory Species of Wild Animals" (Bonn Convention) in 1991. In so doing it adopted the resolution on assistance to developing countries to promote financial, technical and training assistance and to give priority to the management and conservation of migratory species of wild animals in developing countries. The Green, Loggerhead, Leatherback and Hawksbill turtles are listed in Appendix 1, of the Australian vertebrate list.

Fiji is in a position where it may attract foreign funds to compensate land owners for lack of income and inconvenience caused by declaring the waters and islands of the Ringgold and Heemskercq Reefs protected areas. This is similar to proposals being initiated by the National Trust for Fiji for the island of Yanua Taba and its Crested Iguanas. The control of hunting of sea turtles within Fiji is unrealistic without the funds to enforce the legislation. The preservation of the islands of the Ringgold and Heemskercq Reefs is a positive and comparatively low cost measure which will ensure the the conservation of the sea turtles that nest there, and so those that belong to Fiji's present and future generations.

P.111 114

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TOP.118

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"AVLOTU"  
amp. 107

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115

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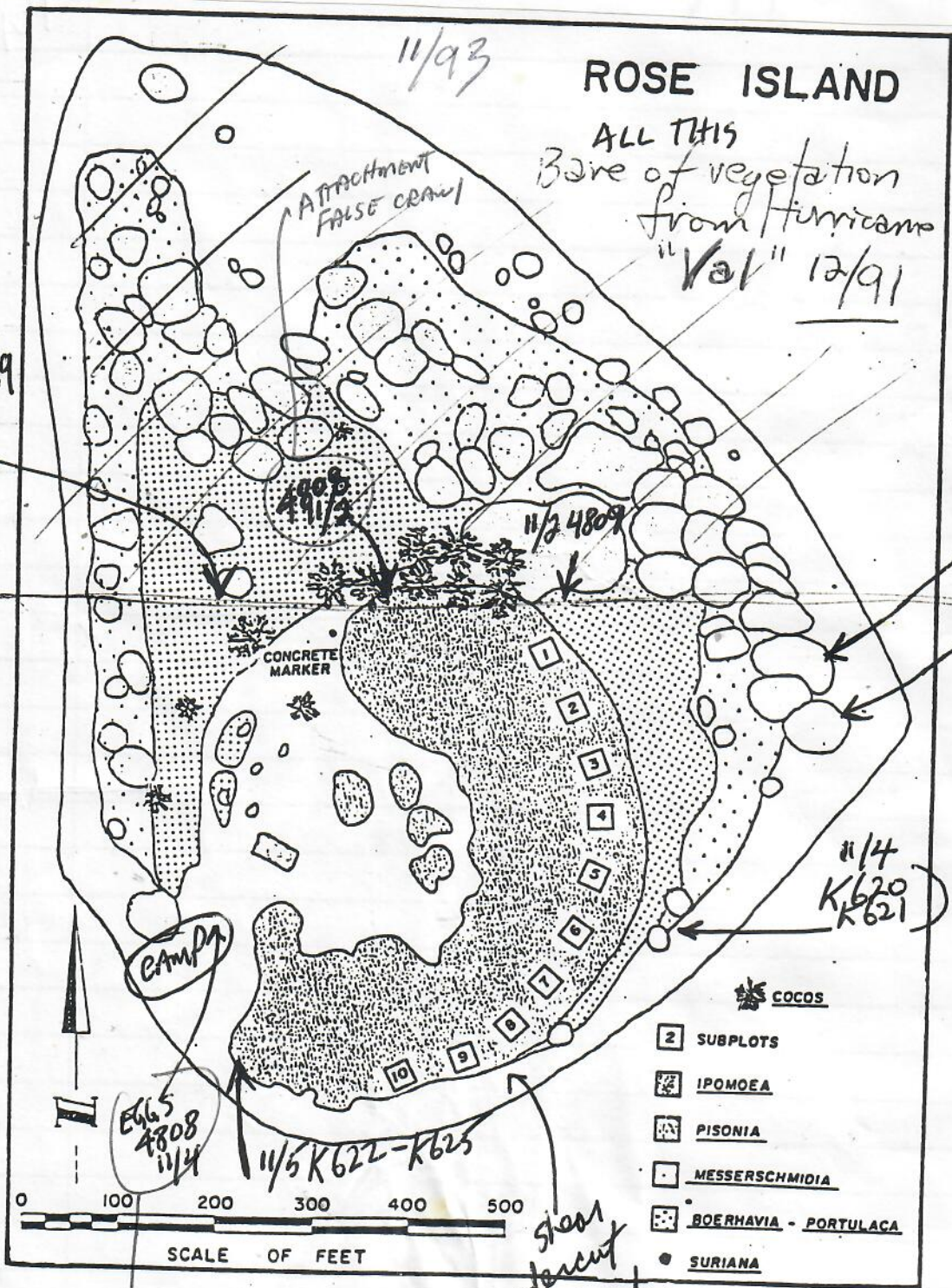
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189 44 136 154  
00 01

*TO PAGE 19*





Photos  
w/TRANSMITTER  
ON

from 25693  
118  
P.114

25693 Date : 22.03.96 19:22:10 LC : A IQ : 00  
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Lat1 : 18.179S Lon1 : 172.543E  
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00 00

60  
21/12

10/25/94

ROSE V

o = likely eggs  
x = likely false dig  
but uncertain.

10/94

new growths of  
Messerschmidia

SAT. TRANS.  
4806

10/29/94 AM  
EGGS LAID

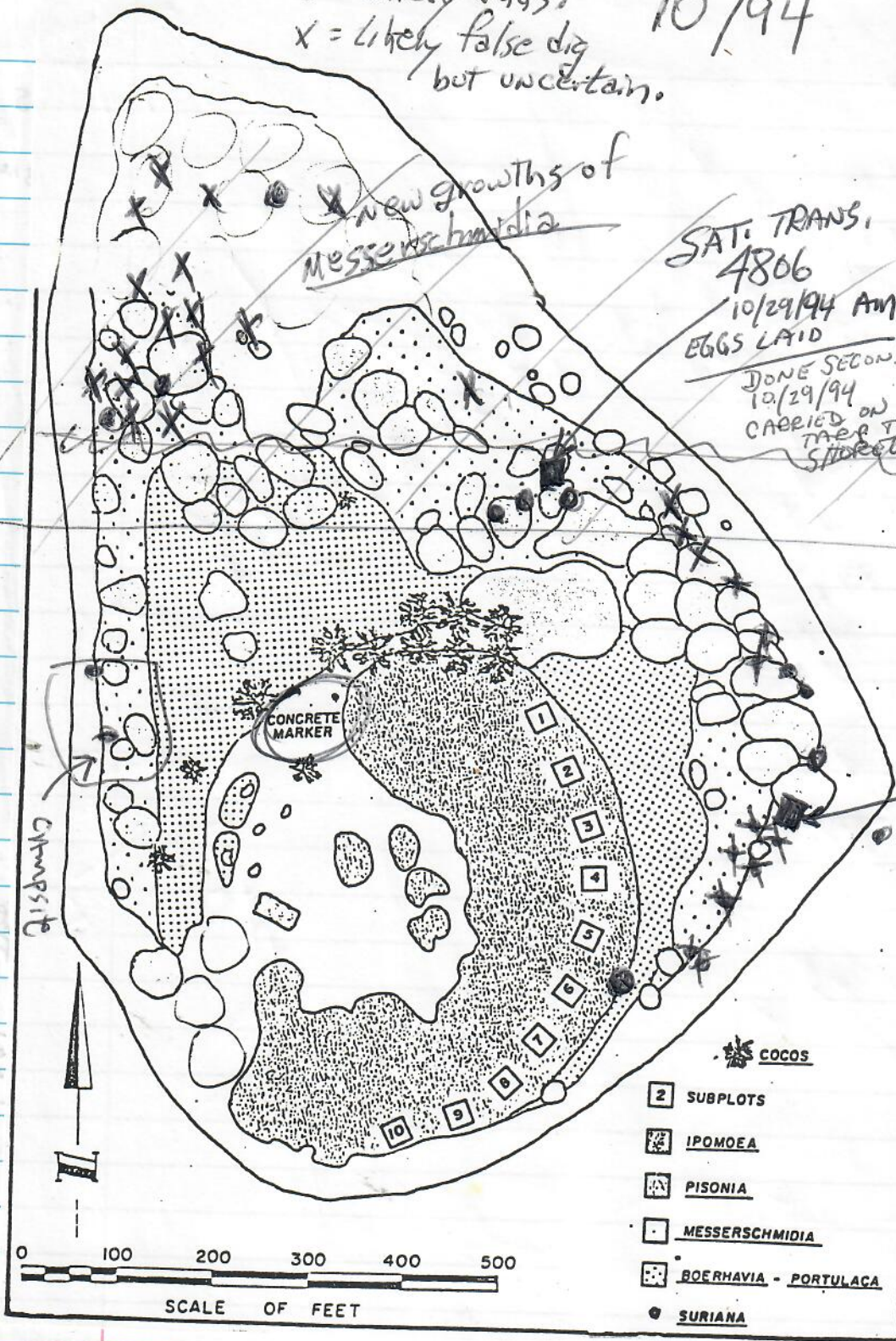
DONE SECOND  
10/29/94  
CARRIED ON  
TRAIL TO  
STREETLINE

10/29/94  
DONE FIRST

SAT. TRANS.  
4805

10/29/94  
AM

FALSE  
NEST  
ON RELEASE,  
STAYED  
IN WAHM  
WATER -  
photo  
under  
umbrella



2 SUBPLOTS

IPOMOEA

PISONIA

MESSERSCHMIDIA

BOERHAVIA - PORTULACA

SURIANA

SCALE OF FEET

120

POSE VI  
OCT. 95

This season = 80 PIT visible 10/23/95 22 PITS visible  
OCT. 95

Q210-Q213 am  
CRAWLING 10/24/95  
Q214  
10/25/95 am

10/23/95  
Q204, Q205 ~ 274/550

ASSUME  
LOTT 3  
10/23/95 = 274/550

Q219-Q220  
TRAILS 2500  
10/25/95

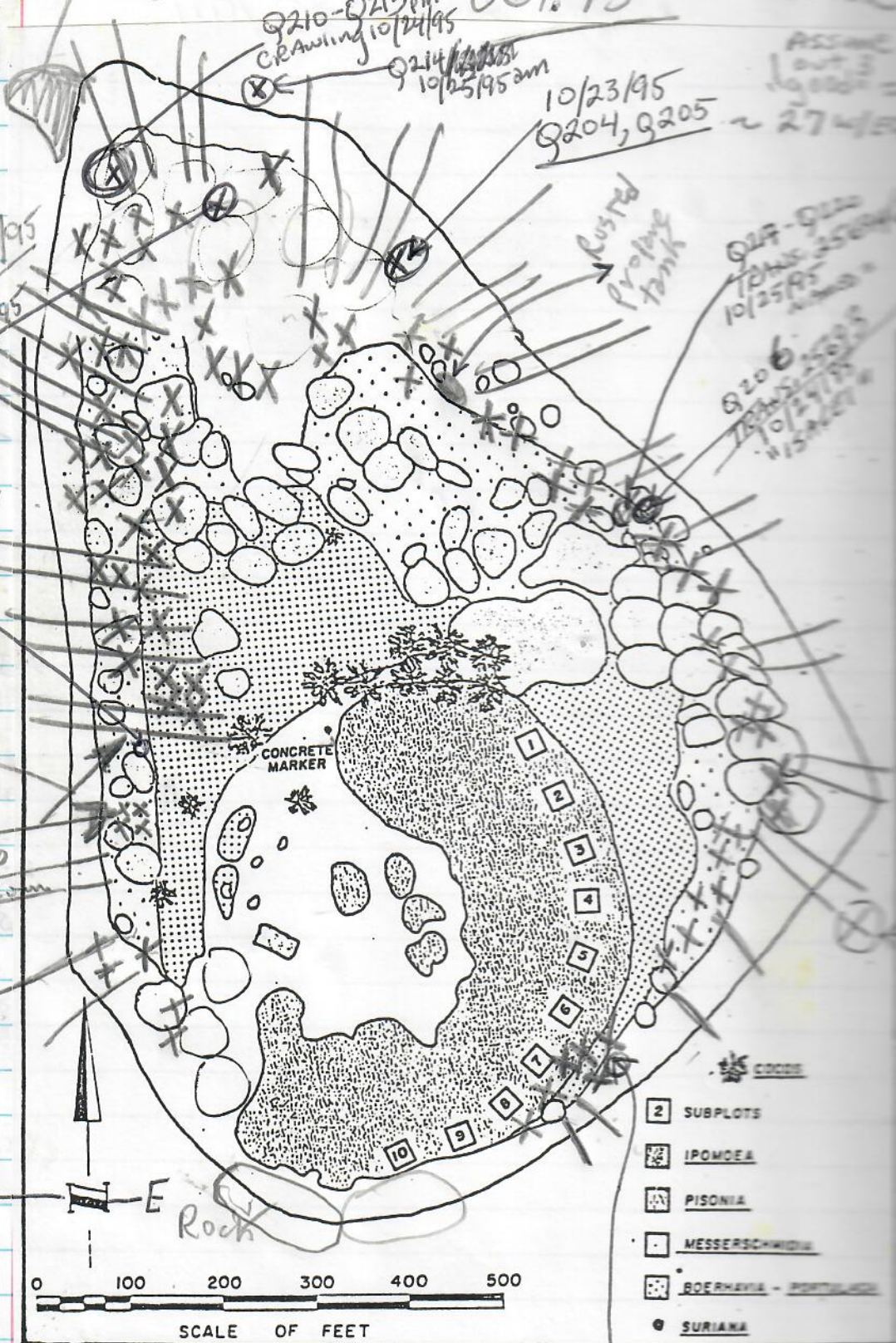
Q206  
TRAILS 2500  
10/24/95  
VISUAL 274

Track  
10/23/95  
PIT X  
Q215  
Q216  
10/25/95 am

5818  
10/24/95  
by Holly's tent

Campsite  
OCT  
1995

9 good  
PITS  
10/22  
up



1995  
NOTE -  
MESSER.  
Now Numerous  
TREES  
and large up to  
2-3 m on  
northern end  
photos  
10/25/95  
to compare  
w/ 1993 oct.  
photos.

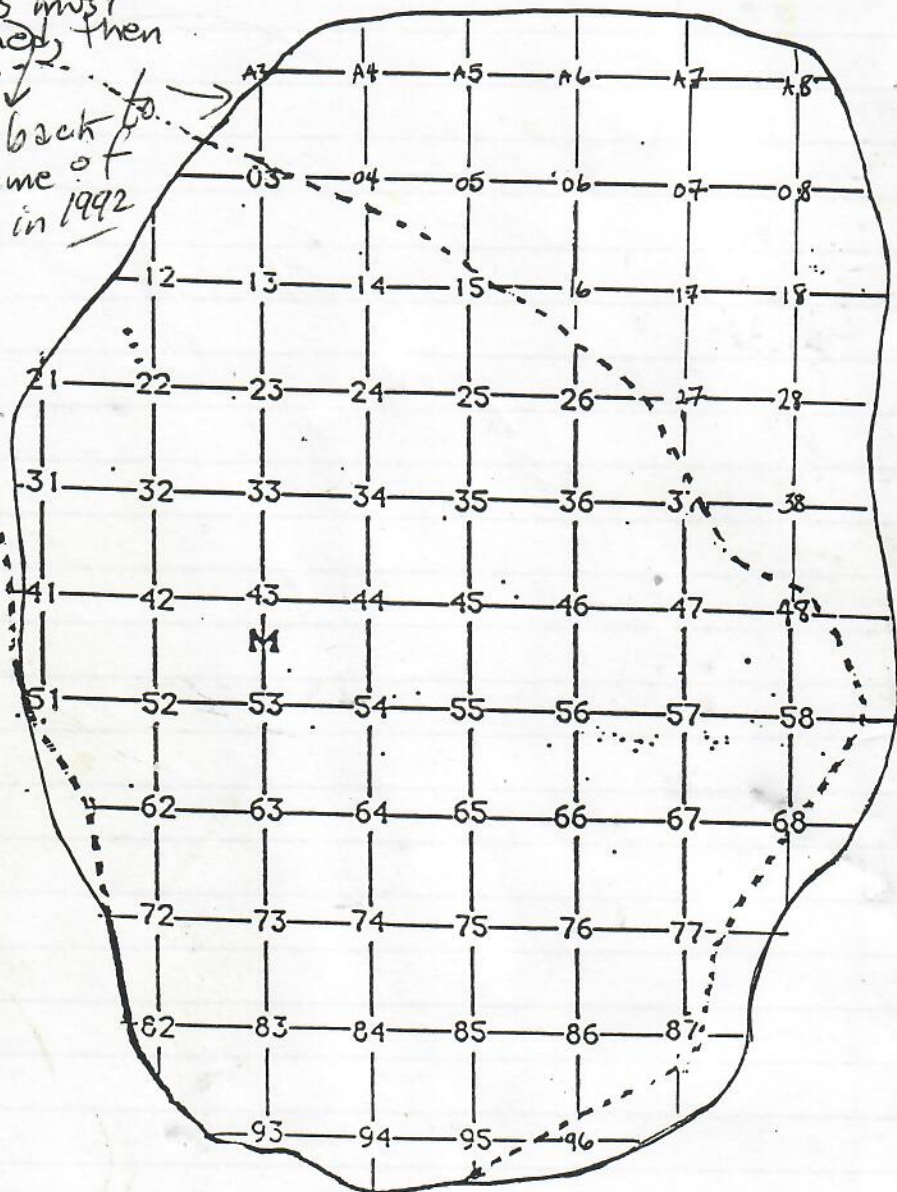
5818  
TRAILS 2569  
10/25/95  
274/550

# ROSE ISLAND SAMPLING GRID - 1992

If true,

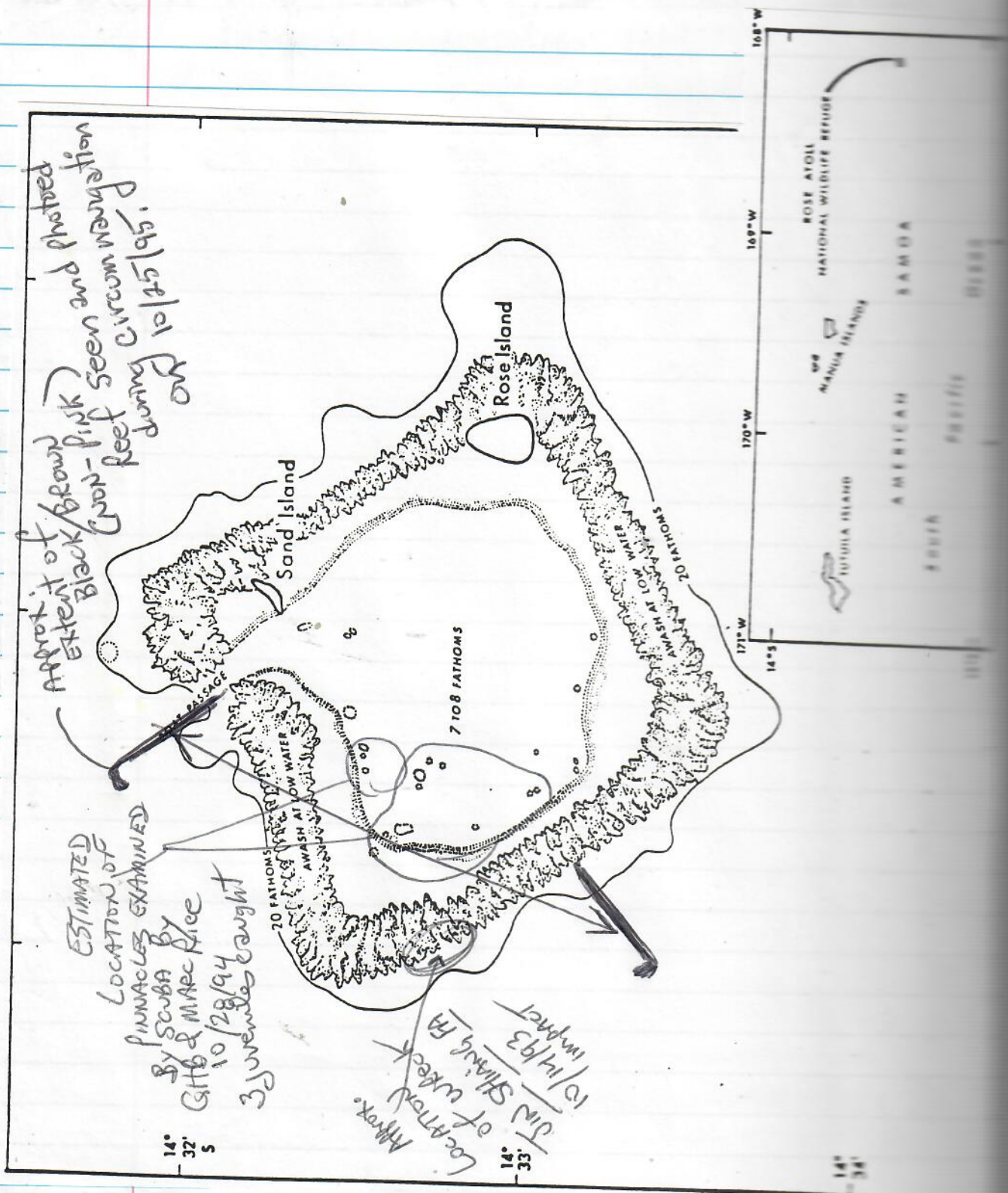
>1986 This must  
have formed, then

returned back to  
by the time of  
survey in 1992



30 meters

from Beth Aust



NO .....

DATE 30/5/94.....

AGRIC. DEPARTMENT.

VEMALI

S.E. AMBRYM

VANUATU.

S.W. PACIFIC.

HIMB

JUN 15 1994

APPLIED

TAGS K622-K625

11/5/93 ROSE ISLAND

CCL 105cm

WEST SHORE near Beach Rock

NESTING - EGGS Laid

HIMB

UNIVERSITY OF HAWAII 96744

HONOLULU

HAWAII.

Dear Sir,

This is just to inform you that  
 of your turtles registered No. K-625 came ashore  
 on the island of Ambrym, Vanuatu on the 1st of  
 April, 1994. It was attacked and killed by a fish  
 therefore it was washed ashore with no head and  
 one hand missing. I decided to inform you as  
 thought this might be of great importance to you  
 on your research as whatever the purpose of  
 marking this turtle.

wishing you all the best.

Rlahu.

RICHARD NAMELSON

Republic of Vanuatu

VEMALI

Agriculture Department

Vemali

S.E. Ambrym, VANUATU

S.W. PACIFIC.

11 July, 1994.

Dear Mr Balazs,

Re: Turtle No K-625.

Here is the information that you requested on the above subject.

I didn't witness the attack so as the boy who found the turtle you tagged. Just because it came ashore with no head and one hand missing, we thought this might have been caused by a shark or some other fishes. There were no other turtles around this location when K-625 was found on the shore - but there are a lot of turtles on Ambrym island so as the other islands of Vanuatu.

Ulei  
Since the turtle (K-625) came ashore on a "Good Friday" (1st April, 1994) it was eaten by the people of Ulei village as a meat supplement during the last easter holidays. There is unconfirmed report that another turtle with tags came ashore at Sesivi village on the western side of Ambrym sometimes earlier. I was unable to find out more about this turtle since it not close to where I am staying.



I would prefer if you could send me a red or yellow, size 44 T-shirt. If you are selling those T-shirts, please send me one extra - the same size but a different color. I promise to send you the cost of this extra one as soon as possible.

Thank you in advance.

Best wishes,

Richard.

RICHARD NAMELSON.

P.S. If you need more information, you may contact me by the above address.

Date: 30 Aug 96 17:37:03 EDT  
 From: TELONICS E MAIL SYSTEM <75052.1563@CompuServe.COM>  
 To: gbalazs@honlab.nmfs.hawaii.edu  
 Subject: fail safe function

TO: INTERNET:gbalazs@honlab.nmfs.hawaii.edu  
 (George Balazs)  
 DATE: 1996.08.30  
 FROM: Brenda Milam  
 (75052.1563@compuserve.com)  
 SUBJ: Fail-safe function

Dear George:

Thank you for your email of 21 August 1996. The transmitter goes into the fail-safe mode after the consecutive hours (number of hours you have specified) have elapsed and have not received any interrupts from the saltwater switch (SWS). When an interrupt finally does arrive from the SWS, the fail-safe mode is terminated and the fail-safe time-out counters are reset.

The fail-safe flag is set to 00 for normal transmissions, and 11 for fail-safe transmissions.

I hope this answers your question. If not, or if you have any further questions please don't hesitate to drop me a line.


Sincerely,

Brenda Milam  
 Telemetry Systems Manager  
 TELONICS email: 75052.1563@compuserve.com  
 932 East Impala Avenue phone: (1-602) 892-4444  
 Mesa, Arizona 85204 USA fax: (1-602) 892-9139

Needs <sup>listed</sup> 1995 for any future trip.

- Wooden stakes for Paravane (8)
- Small mirror
- VHF Radio! we couldn't talk to people and they kept INFLATING!
- Fish hooks (live) fishing line for emergency survival
- Inflatable preserves or?
- Another Paravane Auning
- Large-headed nails
- ✓ - AILAV & MIKA - Send photos
- Some sort of light weight compact vertical (i.e., just wood a screw-together antenna)
- very small amount of Acetone to eliminate moisture on sanded surfaces in very high humidity places (like Rose)
- Damage Assessment Report 8/95 <sup>#100K</sup> <sub>MIKE MOLENA + ?</sub>
- More parachute cord
- Rose 3 mile limit, whale Sanctuary <sup>FWS</sup> <sub>Competition</sub>
- Hydrocortisone for insect bites
- Stanley folding saw #15-333 (light weight)
- Sharpening steel (such as for Bush knife)
- T-VIENH - owner of logline?
- Pro-Pack Sealins (backpack like Hilly)

## Needs Listed 1994

- - Solder  on wire for MFJ for long wire and/or jumper wire
- - Wing-nuts <sup>stainless</sup> for terminals on battery (Gel Cell)
- ✓ - Meter for battery status (amps?)
- ✓ - PARAVANE awning + poles
- insect spray
- Name of 2/82 Hurricane?
- TUSI 3/87? or 4/87?
- Marc Rice - Record of Hurricanes?  
See Amerson report
- - Smaller size Gel Cells
- - Parachute Cord (for awnings, antenna, etc.)  
CAEGE supply
- ✓ - Tent with fly that goes right to the ground
- ✓ - Chair for thermorest mattress
- Small can of insect spray
- ✓ - Head (sweat) band
- - Dry Bags
- ✓ - New Henderson suit
- Tent/boots/copper rod
- ✓ - Photo brochure NAtom; Face Box 3281 <sup>Novoli</sup> A596799
- ✓ - Gloria Scuba day / A/L dec.
- ✓ - Modification to Box 2x2"s to stop tipping
- ✓ - Cool spray (purchase)
- Send DIFT samples
- where are they? - Send ocular "stones" to Davenport (letter first)
- - Sigma Scan of hind flippers p. 28 & 30.
- ✓ - New blue tarp + W. Samoa Apia green p. 59-60.

# USA MARINE VHF RADIOTELEPHONE CHANNEL FREQUENCIES

Channel	Ship Transmit	Ship Receive	Mode S/D	Only Intl	Only Com	USCG	Function		Type of Operation
							Ship-Ship	Ship-Shore	
1A	156.050	156.050	S	yes			yes	yes	Public Correspondence, Port Operation
2A	156.100	156.100	S	yes			yes	yes	Public Correspondence, Port Operation
3A	156.150	156.150	S	yes			yes	yes	Public Correspondence, Port Operation
4A	156.200	156.200	S	yes			yes	yes	Public Correspondence, Port Operation
5A	156.250	156.250	S	yes			yes	yes	Public Correspondence, Port Operation
6	156.300	156.300	S				yes	no	Safety
7A	156.350	160.350	S		yes		yes	yes	Port Operation
8	156.400	156.400	S		yes		yes	no	Intership
9	156.450	156.450	S				yes	yes	Port Operation
10	156.500	156.500	S		yes		yes	yes	Port Operation
11	156.550	156.550	S		yes		yes	yes	Port Operation
12	156.600	156.600	S				yes	yes	Port Operation
13	156.650	156.650	S				yes	yes	Bridge to Bridge (TWT, Navigational)
14	156.700	156.700	S				yes	yes	Port Operation
15	---	156.750	S				yes Rcv	yes Rcv	Recv Only-Coast to Ship
16	156.800	156.800	S				yes	yes	Calling & Safety
17	156.850	156.850	S				yes	yes	Calling & Safety
18A	156.900	156.900	S		yes		yes	yes	Port Operation
19A	156.950	156.950	S		yes		yes	yes	Port Operation
20A	157.000	157.000	S				yes	yes	Port Operation
21A	157.050	157.050	S			yes	yes	yes	Port Operation (USCG)
22A	157.100	157.100	S			yes	yes	yes	Port Operation (USCG)
23A	157.150	157.150	S			yes	yes	yes	Port Operation (USCG)
24	157.200	161.800	D				no	yes	Public Correspondence
25	157.250	161.850	D				no	yes	Public Correspondence
26	157.300	161.900	D				no	yes	Public Correspondence
27	157.350	161.950	D				no	yes	Public Correspondence
28	157.400	162.000	D				no	yes	Public Correspondence

25693 Date : 29.03.96 18:26:40 LC : B IQ : 00

Lat1 : 16.897S Lon1 : 178.918F

185 52 306 66

00 00

25693 Date : 31.03.96 17:43:13 LC : A IQ : 08

Lat1 : 16.810S Lon1 : 179.139F

185 06 401 50

00 00

25693 Date : 31.03.96 19:27:24 LC : 1 IQ : 50

Lat1 : 16.832S Lon1 : 179.216E

186 61 401 50

00 00

25693 Date : 01.04.96 06:18:28 LC : A IQ : 08

Lat1 : 16.822S Lon1 : 179.198E

185 05 155 129

00 01

25693 Date : 02.04.96 18:40:07 LC : B IQ : 00

Lat1 : 16.804S Lon1 : 178.950E

185 105 295 68

00 00

25693 Date : 03.04.96 18:22:28 LC : 1 IQ : 50  
Lat1 : 16.829S Lon1 : 179.197E

185 42 312 64  
00 00

25693 Date : 04.04.96 01:32:04 LC : B IQ : 00  
Lat1 : 16.720S Lon1 : 179.249E

186 976 312 64  
00 00

25693 Date : 04.04.96 12:51:37 LC : 1 IQ : 50  
Lat1 : 16.819S Lon1 : 179.211E

185 5207 242 116  
01 18

25693 Date : 05.04.96 01:29:59 LC : 0 IQ : 58  
Lat1 : 16.836S Lon1 : 179.307E

185 1011 237 84  
00 00

**METRIC** 25693 Date : 06.04.96 07:53:12 LC : B IQ : 00 **QUIVA**

Lat1 : 16.835S Lon1 : 179.205E **VOLUME**

millimeter (m) 184 385 292 68 cubic centimeter (cm³) 0.061 cubic in  
centimeter (c) 00 00 cubic decimeter (dm³) 0.025 cubic ft

25693 Date : 07.04.96 01:06:11 LC : 1 IQ : 60  
Lat1 : 16.813S Lon1 : 179.202E

184 1059 334 680  
hectomete  
kilometer 02 40

25693 Date : 07.04.96 07:22:28 LC : B IQ : 00  
Lat1 : 16.911S Lon1 : 179.122E

**AREA** 184 720 271 72  
square centimeter (cm²) 00 00  
deciliter (dl) 6.1 cubic inch  
liter (l) 61.02 cubic inch  
decaliter (dal) 0.25 cubic feet

25693 Date : 07.04.96 18:34:58 LC : B IQ : 00  
Lat1 : 16.838S Lon1 : 179.204E

184 234 4237 51  
hectare  
sq. kilometer 00 00

25693 Date : 08.04.96 19:53:29 LC : A IQ : 08  
Lat1 : 16.814S Lon1 : 179.216E

**WEIGHT** 186 73 413 49  
milligram (mg) 0.908 quarts  
centigram (cg) 00 01 decaliter (dal) 1.14 pecks

25693 Date : 08.04.96 18:14:14 LC : A IQ : 00  
Lat1 : 16.829S Lon1 : 179.203E

**CAPACITY, LIQUID**  
decagram (Dg) 185 65 413 49 milliliter 0.27 fluidrams  
hectogram (hg) 00 00 centiliter

25693 Date : 08.04.96 13:46:18 LC : Z IQ : 10  
Lat1 : 16.745S Lon1 : 178.899E Lat2 : 16.451S Lon2 : 177.587E

185 05 204 96  
00 00

25693 Date : 11.04.96 07:42:15 LC : B IQ : 00

Lat1 : 16.817S Lon1 : 179.163E

184 1138 162 122  
00 00

25693 Date : 04.04.96 18:02:03 LC : 3 IQ : 68  
Lat1 : 16.828S Lon1 : 179.198E

184 56 237 84  
00 00

Pepper Trail

PEPPER TRAIL has held three post-doctoral positions at the Academy over the past eight years. He wrote to us recently from American Samoa where he is studying forest birds for the Department of Marine and Wildlife Resources.

PAGO, PAGO, American Samoa – Rose Atoll is a National Wildlife Refuge jointly managed by the U.S. Fish and Wildlife Service in Hawaii and by my department here in Samoa. It's about 160 miles east-southeast of Tutuila, off in the blue Pacific, and is everything an atoll should be: beautiful, isolated, uninhabited, and mysterious. Reputedly the smallest atoll in the world (about one mile in diameter), it's ringed by reefs of beautiful rose-pink coralline algae, with a turquoise lagoon and two tiny islands, which are home to one of the most important seabird breeding colonies in Polynesia.

I went there with three feds from Hawaii – Beth Flint, biologist for the Remote Pacific Islands offices of USFWS, her assistant, Nannette Seto, and Jim Murphy, rat-killer extraordinaire for the Animal Damage Control Office of the U.S. Department of Agriculture. Our mission: to complete the eradication of Polynesian rats from Rose Island, the atoll's major island. This eradication effort has been under way for two years, and has reduced a population of approximately two-thousand rats to a handful; the last trip turned up only four rats. We also planned to continue monitoring programs on the vegetation, the reefs, and the breeding seabirds and sea turtles.

I had always wanted to make a long pelagic voyage, to really experience the sea. Well, I have now had that fun, and have consigned that desire to the Tonga Deep. Our vessel was my department's own *Sausaumoana*, a 40-foot trawler converted to serve the research and sport-fishing needs of the American Samoa Government. This is a fine boat, though we were all a bit nervous that this trip was her first voyage since having spent

more than eight months in dry dock. The wind was kicking up as we prepared to depart, but as we affixed anti-seasickness trans-dermal patches behind our ears, I believe we all felt that it would take more than a little chop to keep sea dogs like us in harbor.

This trip we had been told – promised, really – would take 16 to 18 hours (the exact time, I felt, probably depended on how much time we spent trolling for tuna and admiring breaching humpback whales). Well, it was twenty-five-and-a-half hours before the *Sausaumoana* clawed its way into the lagoon; this was the longest trip on record. The seas were unrelentingly terrible: not towering, terrifying waves threatening to dash us to pieces, but staggering, confused seas that threw us around, dropped out from under us, drenched us, and generally made it impossible to sit, stand, walk, read, eat, or sleep. So, gallantly yielding the two bunks to Beth and Nannette, I lay on the cabin floor for hours on end, getting rolled from one bulwark to the other, looking out the door at the stars crazily swinging by and swooping back again, and tried not to think about my gastrointestinal system. I am proud to report that I did not get seasick in the clinical sense, though I certainly got heartily sick of the sea.

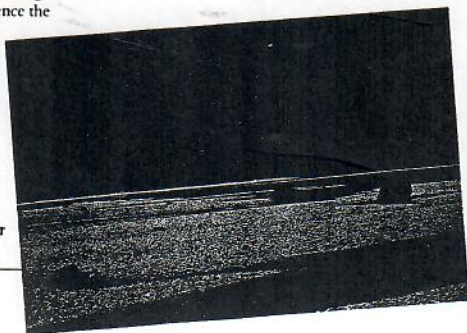
However, the goal was worth the voyage. Undoubtedly colored by what we had been through, the atoll and lagoon were indescribably lovely as we glided in through the suddenly, unbelievably calm channel. The cobalt blue of the

lagoon melted into azure, then turquoise, before yielding to the pink of the reef and the blinding white of the Rose Island sand.

Rose Island is famous for its lush "forest" of tall *pu'a vai*, or *Pisonia* trees, which the earliest explorers said gave the atoll, from the sea, the rounded profile of a loaf of bread. Well, we found the loaf had fallen. Our visit was the first to the atoll since Hurricane Val pounded Samoa in December, and we were all very curious to see what effects that storm had had. We were hoping that Rose had escaped, as it had escaped hurricanes Tusi in 1989 and Ofa in 1990.

But Rose's luck had run out – it took a direct hit. The other small island of the atoll, Sand Island, was now in a completely new spot, having been taken apart grain by grain and reassembled somewhere else. Rose Island was still in the same spot, but was dramatically changed. It had lost about two acres to the northwest, and gained about three on the northeast. The forest was drastically reduced in size, and the remaining area was now surrounded by a barricade of interlocked logs and limbs – this would prove to be great fun to scramble through each day! A large concrete obelisk, which was erected in 1920 to commemorate a visit by a governor, and which had stood just fine since then, was on its back and half buried in coral rubble. So we know that Val was the worst storm to hit Rose in at least 72 years.

The good news was that the forest was not killed – there was already much regeneration – and that the storm didn't



Rose Island, Rose Atoll, American Samoa. The atoll is well named, because its reef is formed of lovely rose-colored coralline algae. In fact, though, its French discoverer, Louis de Freycinet, named it after his mistress.



Left: A cloud of sooty terns swarms up from the nesting colony. Thousands of these terns form a billowing column over the island day and night, and their incessant din makes this remote speck of land as noisy as an airport.



Below: A nesting red-footed booby. These gentle birds allow a close approach – but get too close, and they're liable to regurgitate a squid on your head.

seem to have affected the breeding seabirds at all. By chance, our visit coincided with the peak of nesting for most of the seabirds, most dramatically the sooty terns. The old name for this bird is the wideawake, and I now know why. All day and all night a swirling mass of thousands of these terns hung over the island, keeping up an incessant screaming which was virtually deafening. Beth, who did her graduate work on sooties, said that sound-amplitude measurements had proved sooty tern colonies to be as noisy as jet airports. One reason why snorkeling became one of our favorite activities was that the only time we had any quiet during our two-week stay was when we were underwater.

**B**Y THE TIME WE LEFT, we calculated that there were approximately 25,000 active sooty tern nests on Rose Island, and that the total number of adults was probably around 75,000. In addition, there were more than five hundred active red-footed booby nests, and lower numbers of masked and brown boobies, brown noddies, fairy terns, red-tailed tropicbirds, and lesser and greater frigatebirds. The red-tailed tropicbirds were my favorite – they are dazzlingly white birds (often with a gleaming pinkish shine to their feathers) with red beaks, dramatic black shading around their eyes, and two long, red tail quills. They are marvelous fliers – the sight of a pair of these immaculate birds soaring against the searing blue of the tropical Pacific sky is unforgettable.

All the birds exhibit "island tameness" – that is, they let you walk right up to them. The tropicbirds, in fact, could be lifted in the air to check on their eggs.

The others were not quite so tolerant, and the sooties got very feisty by the end of our stay, regularly pecking our ankles and even rapping our heads as we walked through the colony. However, all allowed close approach, observation, and photography.

As I said, snorkeling in the lagoon became a daily part of our routine. We had to be out of the bird breeding areas between 10:00 A.M. and 3:00 P.M., when it was blistering hot and exposed eggs would quickly cook. Where to more delightfully spend part of that time than in the lagoon, surrounded by the beautiful and the bizarre...and by silence? The snorkeling was the best of my (admittedly limited) experience.

We had two very different locales: one right in front of our camp, where the shallow lagoon was studded with dozens of large coral heads, and the other out near the channel, where several coral pinnacles rose up to just below the surface out of the 20-fathom depths. Snorkeling around the pinnacles was amazing: hanging above the translucent depths, gazing down at coral walls studded with beautiful giant clams, being inspected (just out of arm's reach) by schools of big, curious jacks, watching long-nosed butterfly fish delicately picking at their coralline salads, and flying along above far more gracefully flying sea turtles. The lagoon

shallows offered their own rewards; because they were so close, we became acquainted with "our" fish, including a reliable school of

turquoise parrotfish; nocturnal squirrelfish, shyly peeping out of crevices; many species of psychedelically colored wrasses; and even several tame and curious black-tipped reef sharks. These three- to four-foot sharks were no threat, but were always good for a bit of an adrenaline rush, all the same.

What of our mission, you ask. In the three weeks of trapping (two weeks by our team and another week by our replacements) involving hundreds of live traps, snap traps, and poison baits, we caught a total of...one rat. When one's goal is eradication, one rat is infinitely worse than none, and only insignificantly better than, say, 20 rats. While it is theoretically possible that the rat we caught was The Last Rat (he did look lonely around the eyes...), we obviously can't claim success until we have had a full trapping onslaught and caught no rats. So it looks like a follow-up trip will be required – which I will look forward to, provided it isn't too soon.

Our return trip on the trusty *Sausaumoana*, by the way, was paradisiacal: smooth cruising over the most gently rolling of seas, admiring the explosion of the Southern Hemisphere Milky Way across the sky as we bedded down on deck, after our dinner of grilled ono, fresh-plucked from the sea. It almost made me rethink that pelagic voyage thing...but no. □

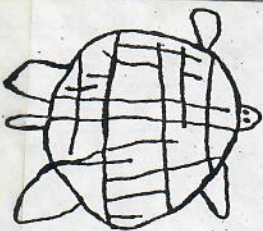
# Turtles in Trouble

by Peter Craig  
National Park of American Samoa

In a Samoan folklore, sea turtles were believed to have the power to save fishermen who were lost at sea by bringing them safely to shore. The Samoan word for sea turtle, "Tasa," translates literally to "sacred fish", presumably because of this ability.

Samoans have traditionally harvested sea turtles for food and the shell was often made into bracelets, combs, fishing hooks, and also was used in the headpiece worn by a princess during important dance ceremonies.

Turtles were incorporated into Samoan songs and art, and there are even turtle petroglyphs (rock carvings) in Faga'ofu and Leone. And, of course, there's the legend about the Turtle and Shark that appear in the sea at Vaitogi when villagers sing a special song.



TURTLE PETROGLYPH

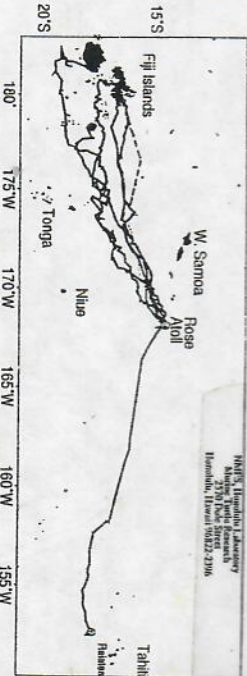
It therefore seems extra-ordinary that turtle numbers in Samoa have declined so much that they are now considered endangered species. Although it is difficult to determine how many are left, only about 120 females may lay eggs per year in the whole Territory.

This drop parallels the worldwide decline of sea turtles due to overharvesting, loss of nesting beaches, and incidental kills in fishing gear. Pacific populations of one of our species (hawksbill) are "rapidly approaching extinction" according to a recent review.

Two turtle species inhabit our local waters. The hawksbill or "haumei tuga" (*Eretmochelys imbricata*) is usually the species that nests on Tutuila and Manu'a beaches. This is a solitary nester, and perhaps only 2 or 3 hawksbill females now use a suitable beach. The hawksbill is occasionally poisonous—in the late 1950s, many people in Aunu'u got very sick after eating one.

Our other species is the green sea turtle (*Chelonia mydas*). It is also found around our islands, but it nests primarily at Rose Atoll.

These long-lived turtles have rather complicated life cycles that involve repeated long-distance migrations to and from American Samoa. They start life as eggs buried in beach sand. Once a female has laid her first group of about 100 eggs, she will return at 2-week



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intervals to lay more. In about 60 days, the eggs hatch and the little turtles dart into the ocean. Where they go is not known, but eventually the take up residence at some feeding area that may be far away from American Samoa.

There they remain for some 20-25 years until they become sexually mature, at which time they return to the very same beach where they came from. After laying eggs there, the adult females then turn around and go back to their distant feeding grounds. That's the basic pattern for most sea turtle species throughout the world. Swim far away to some feeding area, then swim back to lay eggs, back and forth every few years thereafter.

We have some very interesting migration data for green sea turtles at Rose Atoll, where George Balazs (a federal scientist) led a tagging study in the mid-1990's. In all, 10 tagged turtles were recovered after nesting at the atoll. Eight swam 1000 miles directly to Fiji (unfortunately two of them were eaten when they got there). Another went past Fiji to Vanuatu,

and the last one went in the completely opposite direction to French Polynesia near Tahiti. It's understandable why the turtles do not stay at Rose Atoll after nesting, because their favorite food (sea grass) is absent there. But I wonder why don't just stay in Fiji where they have both food and nesting beaches.

Anyway, this pattern of large-scale movements between a turtle's nesting area and feeding area means that turtle stocks in the South Pacific Ocean are all mixed together. While some of "our" turtles were caught in Fiji, the reciprocal is also true—turtles that feed in our waters probably originated from islands elsewhere in the South Pacific.

This mixing greatly complicates conservation efforts. It means that region-wide cooperation among the island countries of the South Pacific is essential; otherwise, while we try to protect turtles in American Samoa, our turtles may be killed later when they migrate to other islands.

Tough federal and territorial laws exist here to protect turtles and their eggs, because they are an endangered species. There is a \$10,500 penalty for killing a turtle or importing any turtle products into the Territory (shells, stuffed turtles, turtle combs, etc.). Fortunately fewer turtles are being taken in American Samoa, probably due to their scarcity but also due to outreach programs that inform children and villagers about the endangered status of the turtles.

In addition to education efforts, we must protect both the turtles and their habitat. Sandy beaches are essential as turtles nesting areas, so hauling sand away from our beaches results in the loss of critical habitat for these species. No beaches, no nesting turtles.

Although some villagers may still like to eat turtle meat and eggs, the point to remember is that turtles are a disappearing resource in American Samoa. They are a part of Samoa's heritage and need to be vigorously protected, or they may be lost altogether. It is a sad commentary that many young Samoans have never even seen a live sea turtle.

No. 09-9132  
Coll. Margin 60 Pgs



PAAT 1 of 2  
HAS IOTA OC-190 GHB  
HAM RADIO CONTACTS